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# Columbia University Bulletin of Information

## EXTENSION TEACHING ANNOUNCEMENT

AFTERNOON, EVENING, AND SATURDAY CLASSES  
MORNINGSIDE HEIGHTS

1918-1919 24

PUBLISHED BY  
Columbia University  
in the City of New York  
MORNINGSIDE HEIGHTS  
NEW YORK CITY

## **Columbia University Bulletin of Information**

[Issued thirty-five times during the academic year, monthly in November, and weekly between December and July. Entered as second-class matter at the New York, N. Y., Post Office, Dec. 22, 1900, under the Act of July 16, 1894.] These include:

1. Annual Reports of the President and Treasurer to the Trustees.
2. The Catalogue of the University, price 25 cents, and the Announcements of the several Colleges and Schools, and of certain Divisions, issued in the Spring, and relating to the work of the next year. These are made as accurate as possible, but the right is reserved to make changes in detail as circumstances require. The current number of any of these Announcements will be sent without charge upon application to the Secretary of the University.

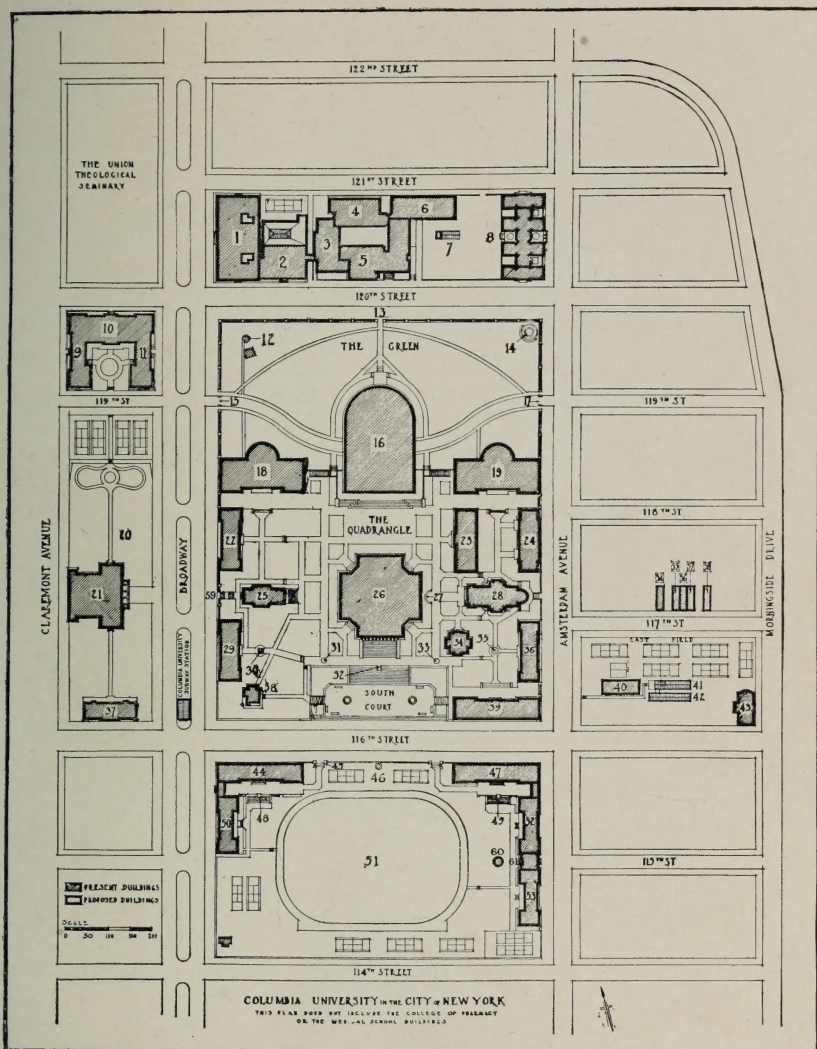
U. P. O.-45,000-1918.

**The office of Extension Teaching is Room 301 University Hall**

**If any courses are added after June 1  
a special circular will be issued in September.**



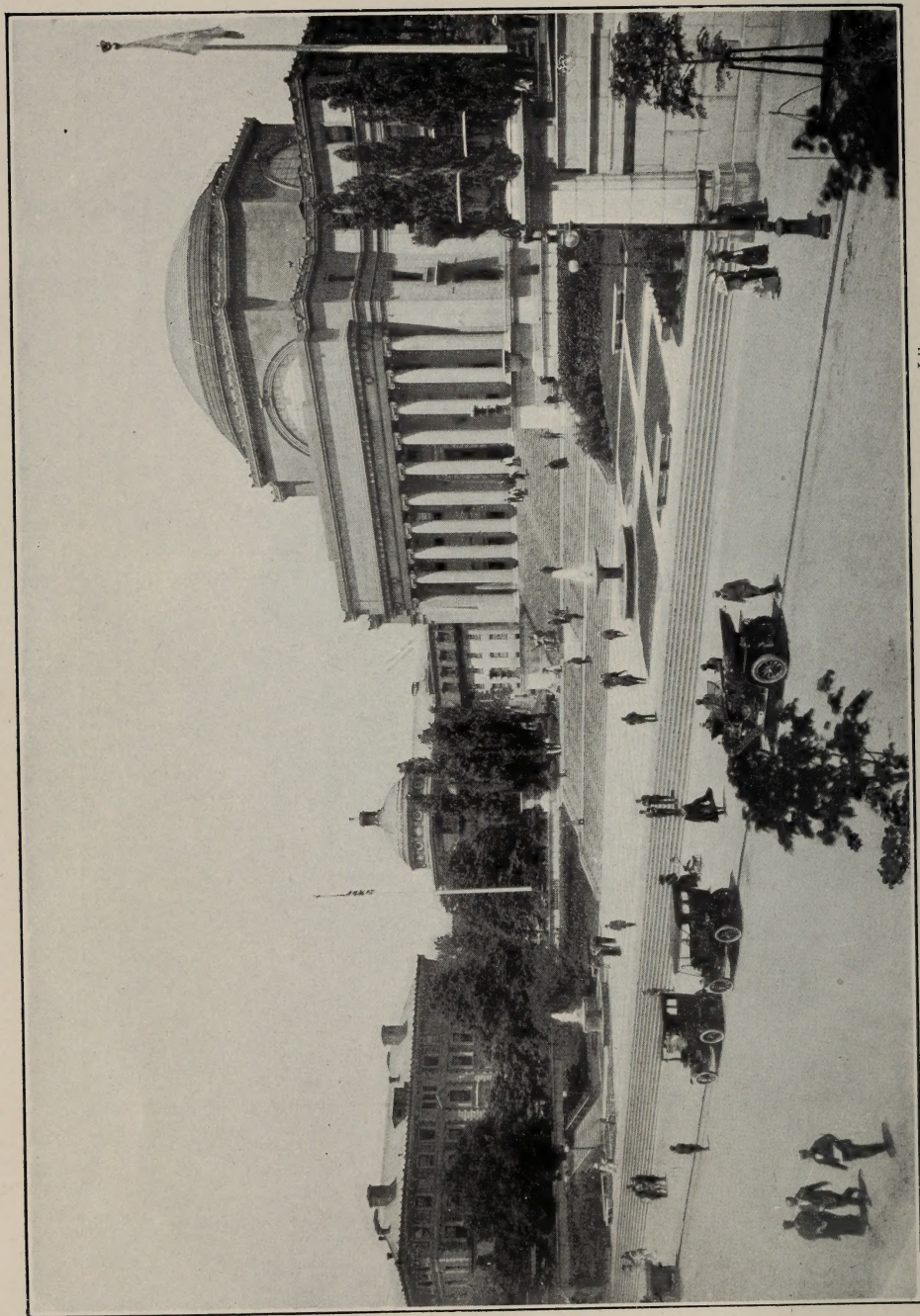
# INFORMATION IN REGARD TO THE BUILDINGS AND GROUNDS OF COLUMBIA UNIVERSITY



- Teachers College  
 1. Horace Mann School  
 2. Thompson Memorial Bldg.  
 3. Milbank Memorial Chapel  
 4. Macy  
 5. Main Building  
 6. Household Arts  
 7. Peabody Greenhouse  
 8. Whittier  
 Barnard College  
 9. Fiske  
 10. Milbank  
 11. Brinckerhoff  
 12. Milbank Quadrangle  
 13. Students' Hall  
 14. Brooks Hall  
 Columbia University  
 12. Wilde Observatory  
 13. Class of 1882 Gates  
 14. Statue of the great God Pan  
 15. Mapes Gates  
 16. University

17. Class of 1888 Gate  
 18. Havemeyer  
 19. Schermerhorn  
 22. Engineering  
 23. Avery  
 24. Fayerweather  
 25. Earl  
 26. Library  
 27. Class of 1886 Exedra  
 28. St. Paul's Chapel  
 29. Mines  
 30. Meunier's Hammerman,  
 1889 Mines Class Gift  
 31. Lafayette Post Flag Staff  
 32. Statue of Alma Mater  
 33. Class of 1881 Flag Staff  
 34. East  
 35. Class of 1887 Well Head  
 36. Philosophy  
 38. Faculty Club  
 39. Kent  
 40. Crocker Research

41. Botany Greenhouse  
 42. Agriculture Greenhouse  
 43. President's House  
 44. Journalism  
 45. Classes of 1884 and 1899  
 Tablet  
 46. Class of 1885 Sun Dial  
 47. Hamilton  
 48. Jefferson Statue  
 49. Hamilton Statue  
 50. Furnald  
 51. South Field  
 52. Hartley  
 53. Livingston  
 54. Deutsches Haus  
 55. Dean Hawkes  
 56. Chaplain Knox  
 57. Maison Française  
 58. Carnegie Endowment  
 59. Gates  
 60. Van Amringe Memorial  
 1906 Clock



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Instructor, Extension Teaching, Columbia	
NINA MILLER, M.S. . . . .	<i>Accounting</i>
Instructor, Columbia	
WILLIAM PEPPERELL MONTAGUE, PH.D. . . . .	<i>Philosophy</i>
Associate professor, Columbia	
ROBERT H. MONTGOMERY, C.P.A. . . . .	<i>Accounting</i>
Assistant professor, Columbia	
FRANK GARDNER MOORE, PH.D. . . . .	<i>Latin</i>
Professor, Columbia	

J. HAROLD MORECROFT, B.S.	<i>Electrical engineering</i>
Associate professor, Columbia	
O. S. MORGAN, PH.D.	<i>Agriculture</i>
Professor, Columbia	
WILLIAM THOMAS MORGAN, PH.D.	<i>History</i>
Instructor, Columbia	
FREDERICK K. MORRIS, A.M.	<i>Geology</i>
Instructor, Columbia	
LEIGHTON B. MORSE, PH.D.	<i>Physics</i>
Instructor, Columbia	
LOIS COFFEY MOSSMAN	<i>Elementary education</i>
Instructor, Teachers College	
GEORGE W. MULLINS, PH.D.	<i>Mathematics</i>
Instructor, Columbia	
HENRY FRASER MUNRO, A.M.	<i>International law</i>
Instructor, Extension Teaching; lecturer, Columbia	
THOMAS MUNROE	<i>Philosophy</i>
Instructor, Extension Teaching, Columbia	
KATHARINE MURDOCK, A.M.	<i>Psychology</i>
Instructor, New York School of Philanthropy and Bellevue Training School for Nurses	
DAVID SAVILLE MUZZEY, PH.D.	<i>History</i>
Associate professor, Columbia	
ARTHUR C. NEISH, PH.D.	<i>Chemistry</i>
Assistant professor, Columbia	
CHRISTINE WARNER NELSON	<i>Household arts</i>
Assistant, Teachers College	
BELLE NORTHRUP	<i>Fine arts</i>
Assistant, Teachers College	
TORIBIO ESQUIVEL OBREGON, LL.D.	<i>Commercial law</i>
Instructor, Extension Teaching, Columbia	
HENRI C. OLINGER, A.M.	<i>French</i>
Instructor, New York University	
WILLIS A. PARKER, PH.D.	<i>Philosophy</i>
Professor of philosophy, Pomona	
HELEN HUSS PARKHURST, PH.D.	<i>Philosophy</i>
Assistant, Columbia	
SARA LYMAN PATRICK, A.M.	<i>Industrial arts education</i>
Instructor, Teachers College	
FRANCES TAYLOR PATTERSON, A.B.	<i>Photoplay composition</i>
Instructor, Extension Teaching, Columbia	
FRANK ALLEN PATTERSON, PH.D., Assistant to Director, Morningside.	<i>English</i>
Assistant professor, Columbia	
WILLIAM M. PATTERSON, PH.D.	<i>English</i>
Instructor, Columbia	
MARY HENLEY PEACOCK, PH.B.	<i>Household arts</i>
Instructor, Teachers College	



WALTER E. PECK, A.M. . . . .	<i>English</i>
Instructor, Extension Teaching, Columbia	
JOSEPH LOUIS PERRIER, PH.D. . . . .	<i>French</i>
Lecturer, Columbia	
AUGUST PETERSON . . . . .	<i>Physical education</i>
Athletic trainer and coach, Columbia	
EMIL LEON POST, B.S. . . . .	<i>Mathematics</i>
Instructor, Extension Teaching, Columbia	
JOHN DYNELEY PRINCE, PH.D. . . . .	<i>History and Russian</i>
Professor, Columbia	
MAX RADIN, PH.D. . . . .	<i>Semitic</i>
Instructor, Extension Teaching, Columbia	
WALTER RAUTENSTRAUCH, M.S. . . . .	<i>Factory management</i>
Consulting engineer, professor of mechanical engineering, Columbia	
KATHARINE C. REILEY, PH.D., <i>Assistant to Director</i> . . . .	<i>Classical literature</i>
Adviser to women, Extension Teaching; assistant professor, Columbia	
ARTHUR FRANK JOSEPH REMY, PH.D. . . . .	<i>German</i>
Associate professor, Columbia	
JOSEPH FELS RITT, PH.D. . . . .	<i>Mathematics</i>
Assistant, Columbia	
JAMES HARRY ROBINSON, PH.D. . . . .	<i>History</i>
Professor, Columbia	
LELAND REX ROBINSON . . . . .	<i>Economics</i>
Instructor, Extension Teaching, Columbia	
JOHN F. D. ROHRBACH, C.P.A. . . . .	<i>Accounting</i>
Instructor, Extension Teaching, Columbia	
EDWARD MCCHESENEY SALT, PH.D. . . . .	<i>Government</i>
Assistant professor, Columbia	
WILLIAM AUSTIN SANDERS . . . . .	<i>Architecture</i>
Office manager, Trowbridge and Livingston, architects, New York City	
DOROTHY SCARBOROUGH, PH.D. . . . .	<i>English and secretarial correspondence</i>
Instructor, Extension Teaching, Columbia	
HERBERT WALLACE SCHNEIDER, PH.D. . . . .	<i>Philosophy</i>
Instructor, Columbia	
FREDERICK WILLIAM SCHOLZ, A.M. . . . .	<i>German</i>
Instructor, Columbia	
HENRY H. L. SCHULZE, A.M. . . . .	<i>German</i>
Assistant professor, Columbia	
ROBERT LIVINGSTON SCHUYLER, PH.D. . . . .	<i>History</i>
Assistant professor, Columbia	
EDWIN R. A. SELIGMAN, PH.D., LL.D. . . . .	<i>Economics</i>
McVickar professor, Columbia	
BERTHA E. SHAPLEIGH . . . . .	<i>Household arts</i>
Instructor, Teachers College	
HERBERT N. SHENTON, A.M. . . . .	<i>Sociology</i>
Instructor, Columbia	

WILLIAM R. SHEPHERD, PH.D. . . . .	<i>History</i>
Professor, Columbia	
HENRY CLAPP SHERMAN, PH.D. . . . .	<i>Food chemistry</i>
Professor, Columbia	
ARTHUR SINSHEIMER . . . . .	<i>Retail advertising</i>
Advertising manager, retail service departments, <i>Dry Goods Economist</i> ; advertising and business manager of The Hardware Age Service in the United Publishers Corporation	
WALTER IRVINE SLICHTER, E.E. . . . .	<i>Electrical engineering</i>
Professor, Columbia	
ALEXANDER GUY HOLBORN SPIERS, PH.D. . . . .	<i>French</i>
Associate professor, Columbia	
CAROLINE E. STACKPOLE, A.M. . . . .	<i>Biology</i>
Instructor, Teachers College	
HARRISON ROSS STEEVES, PH.D. . . . .	<i>English</i>
Assistant professor, Columbia	
W. M. STEMPEL, M.S. . . . .	<i>Physics</i>
Instructor, Extension Teaching, Columbia	
ARCHIBALD HERBERT STOCKDER, A.M. . . . .	<i>Business</i>
Instructor, Extension Teaching, Columbia	
CORNELIA H. STONE, A.B. . . . .	<i>Household arts</i>
Instructor, Teachers College	
EDGAR S. STOWELL . . . . .	<i>Music</i>
Lecturer, Teachers College	
HARVEY JULIAN SWANN, A.M. . . . .	<i>French</i>
Instructor, Extension Teaching, Columbia	
J. A. SWENSON . . . . .	<i>Mathematics</i>
Instructor, Extension Teaching, Columbia	
SALLIE B. TANNAHILL, B.S. . . . .	<i>Fine arts</i>
Instructor, Teachers College	
ALGERNON TASSIN, A.M. . . . .	<i>English</i>
Assistant professor, Columbia	
ORDWAY TEAD, A.B. . . . .	<i>Personnel management</i>
Instructor, Extension Teaching, Columbia	
EDWARD THATCHER . . . . .	<i>Fine and industrial arts</i>
Instructor, Teachers College	
J. F. THOMAS . . . . .	<i>Sociology</i>
Instructor, Extension Teaching, Columbia	
ASHLEY H. THORNDIKE, PH.D. . . . .	<i>English</i>
Professor, Columbia	
WILLIAM TILLY . . . . .	<i>Phonetics</i>
Instructor, Extension Teaching, Columbia	
FREDERICK TILNEY, M.D., PH.D. . . . .	<i>Neurology</i>
Professor, Columbia	
EVELYN SMITH TOBEY, B.S. . . . .	<i>Household arts</i>
Instructor, Teachers College	
HENRY A. TODD, PH.D. . . . .	<i>French</i>
Professor, Columbia	

ARTURO TORRES, A.M. . . . .	<i>Spanish</i>
Instructor, Extension Teaching, Columbia	
WILLIAM P. TRENT, D.C.L. . . . .	<i>English</i>
Professor, Columbia	
CHARLES BABCOCK UPJOHN . . . . .	<i>Fine arts</i>
Instructor, Teachers College	
JOSEPH ANTHONY VAETH, PH.D. . . . .	<i>Spanish</i>
Instructor, New York University	
MAY B. VAN ARSDALE, B.S. . . . .	<i>Household arts</i>
Assistant professor, Columbia	
SADIE B. VANDERBILT, B.S. . . . .	<i>Household arts</i>
Instructor, Teachers College	
LA RUE VAN HOOK, PH.D. . . . .	<i>Greek</i>
Associate professor, Columbia	
T. W. VAN METRE, PH.D. . . . .	<i>Transportation</i>
Assistant professor, Columbia	
GEORGE HENRY VAN TUYL. . . . .	<i>Commercial arithmetic</i>
Instructor, Extension Teaching, Columbia	
HERMAN T. VULTÉ, PH.D. . . . .	<i>Household arts</i>
Assistant professor, Columbia	
FRANK EDWIN WARD . . . . .	<i>Music</i>
Associate in music, Columbia	
ARTHUR WARE, B.S. . . . .	<i>Architecture</i>
Associate, Columbia	
RAYMOND MELBOURNE WEAVER, A.M. . . . .	<i>English</i>
Instructor, Columbia	
RAYMOND WEEKS, PH.D. . . . .	<i>French</i>
Professor, Columbia	
GERALD WEEMAN . . . . .	<i>Physical education</i>
Instructor, Columbia	
MORRIS FRANCIS WEINRICH, PH.D. . . . .	<i>Physics</i>
Instructor, Columbia	
BESSIE SCOTT WHITE . . . . .	<i>Household arts</i>
Instructor, Teachers College	
CLARENCE HUDSON WHITE . . . . .	<i>Fine arts</i>
Lecturer, Teachers College	
MARY THEODORA WHITLEY, PH.D. . . . .	<i>Education</i>
Assistant professor, Columbia	
MAY JOSEPHINE WIETHAN, A.C.M. . . . .	<i>Music</i>
Assistant, Teachers College	
LAWRENCE A. WILKINS, A.M. . . . .	<i>Spanish</i>
Instructor, Extension Teaching, Columbia	
GERALD THOMAS WILKINSON, A.M. . . . .	<i>French</i>
Instructor, Columbia	
BLANCHE COLTON WILLIAMS, PH.D. . . . .	<i>English</i>
Professor, Hunter College	



RUTH WILMOT . . . . .	<i>Household arts</i>
Instructor, Teachers College	
EMMA A. WINSLOW, A.M. . . . .	<i>Household arts</i>
Lecturer, Teachers College	
SAMUEL LEE WOLFF, PH.D. . . . .	<i>English</i>
Instructor, Extension Teaching, Columbia	
THOMAS DENISON WOOD, M.D. . . . .	<i>Physical education</i>
Professor, Columbia	
ROBERT SESSIONS WOODWORTH, PH.D. . . . .	<i>Psychology</i>
Professor, Columbia	
T. L. WOOLHOUSE . . . . .	<i>Accounting</i>
Instructor, Extension Teaching, Columbia	
I. MAURICE WORMSER, LL.B. . . . .	<i>Commercial law</i>
Instructor, Extension Teaching, Columbia	
A. H. WRIGHT, A.M. . . . .	<i>Chemistry</i>
Laboratory assistant, Columbia	
JAMES J. WRIGHT . . . . .	<i>Stenography and typewriting</i>
Instructor, Extension Teaching, Columbia	
THEODORA ETHEL WYE, B.S. . . . .	<i>Latin</i>
Instructor, Extension Teaching, Columbia	
CLARENCE H. YOUNG, PH.D. . . . .	<i>Greek</i>
Professor, Columbia	
BERNADINE MEYER YUNCK . . . . .	<i>Physical education</i>
Instructor, Teachers College	
HAROLD P. ZOLLER, B.ARCH. . . . .	<i>Architecture</i>
Instructor, Extension Teaching, Columbia	

## INTRODUCTORY

The Statutes of the University (Section 250) define Extension Teaching as "instruction given by University officers and under the administrative supervision and control of the University, either away from the University buildings, or at the University, for the benefit of students unable to attend the regular courses of instruction."

**Students.** Courses in Extension Teaching are planned for two classes of students: *first*, men and women who can give only a portion of their time to study and who desire to pursue subjects included in a liberal education of the character and grade of a college or professional school, but without any reference to an academic degree; *second*, those who look forward to qualifying themselves to obtain in the future academic recognition, involving acceptance of the work which they may satisfactorily complete in Extension Teaching.

**Courses of Instruction.** Under the direction of the University Council courses are offered in Extension Teaching which count toward the degrees of Master of Arts and Doctor of Philosophy.

Regular courses of instruction are offered in Extension Teaching which in many instances are coordinated so as to form at least the first years of collegiate and professional work, thus providing in the evening at Morningside Heights, and elsewhere, courses in subjects which are generally offered in the freshman, sophomore and junior years of college, so that students may qualify themselves for admission with advanced standing to Columbia and Barnard Colleges or other institutions as candidates for the degrees of Bachelor of Arts and Bachelor of Science.

There are also offered at Morningside Heights, in the evening, subjects which are required of students of the Schools of Mines, Engineering and Chemistry, so that a student may pursue some special line of scientific study or prepare himself for advanced study in these schools. Classes in these schools are open only to those who have had a preliminary course of three years in Columbia College or the equivalent. This preliminary collegiate training may be taken in part or in full in Extension Teaching in the evening by students engaged in business during the day. See pp. 11, 12.

Evening courses are offered in architecture, leading to a certificate, at Morningside Heights, which correspond to courses of the Columbia University School of Architecture. See pp. 7, 8.

Evening classes in business, forming a three-year course leading to a certificate and preparing for the State examination for the certificate of Certified Public Accountant, are given at Morningside Heights. A special circular describing these courses in detail will be mailed upon request. See also pp. 8, 9.

A series of courses intended to equip students for the position of private secretary is also offered. The completion of these courses will require two years for high school graduates. These courses are carefully described in a special circular which will be mailed on application. See also p. 14.

A complete series of courses in library economy are given for the purpose of training high school and college graduates for positions as library assistants. A circular stating the requirements for students in this course will be mailed upon request. See also pp. 69-71.

Many courses are offered which aid a student to prepare for the Schools of Business, Law and Medicine or to complete his preparation for Columbia College. See pp. 10, 11.

A two-year course in practical optics is offered in cooperation with the Department of Physics for the special training of those who desire to become optometrists. A special circular will be mailed upon request. See also p. 13.

Courses are offered in agriculture for those who desire special work in that subject.

Under the Extension Teaching Department are offered also a number of classes in dentistry. These include graduate courses for practitioners, intended for graduates of reputable dental institutions. They are given at 35-37 West Thirty-ninth Street. In addition, classes in oral hygiene for licensed dental hygienists, designed to train women for the practice of operative dental hygiene, are offered at the Vanderbilt Clinic, Fifty-ninth Street and Tenth Avenue.

A large number of other courses in varied subjects is given late in the afternoon and on Saturday which repeat those in liberal studies offered in the Schools of the University. These are given in the same manner and often by the same instructors as the regular courses. In most instances university credit is granted.

Courses covering the first two years of collegiate study and supplying the pre-medical years of the Long Island College Hospital are given at that institution. See special circular.

Numerous classes are given at various centers. These are either regular courses of collegiate grade or short lecture courses without academic credit. See special circular.

Lecture-study courses in certain subjects forming fifteen or thirty lectures alternating with quiz or conference hours are given at Morningside Heights and at centers when requested.

Centers for the study of choral music are maintained at Morningside Heights and Brooklyn and large choral concerts are given during the year.

The Department of Extension Teaching maintains also the Institute of Arts and Sciences, described on p. 14.

**Registration.** Registration in the Winter Session begins September 18, 1918; in the Spring Session, January 30, 1919. The office of the Registrar is in University Hall, East Corridor. It is open regularly from 9 a. m. to 5 p. m., and on and after October 7, from 7 to 9 p. m., but from September 18 to October 4, 1918, and from January 30 to February 14, 1919, the office will be open in the evening from 7 until 9:30. On Saturday it is open from 9 a. m. to 12 m.

Students are permitted to attend any course once before registering. Thereafter they are required to come to the Registrar's office in person and file a registration blank giving such information as may be required for the University records and a statement of the courses they intend to pursue. Under the Statutes of the University the payment of fees constitutes part of registration. Accordingly, students should come prepared to pay the stated fees for the courses for which they desire to register.



All students are required to renew their registration in person at the beginning of the Spring Session.

Students taking courses at a local center will register at that center in accordance with instructions given in the statements introductory to those courses.

When students report at the office of the Registrar not later than October 5 for the Winter Session and not later than February 15 for the Spring Session that they have discontinued any or all courses for which they were duly registered, the tuition fees are returned; when they report after that date no rebate or credit is allowed. In the case of new students who register for the first time after September 28 and February 8 respectively, one week from the date of registration is allowed for such report. Thereafter, students who are obliged to withdraw entirely from the University because of serious personal illness, and only such, may be allowed a partial rebate of their tuition fees. In considering such applications, the student will ordinarily be charged ten per cent. of the total tuition fee for each week of the Session up to the date his written notice of withdrawal is received by the Registrar.

**Fees.** Unless otherwise directed, students will pay all fees at the office of the Bursar, West Corridor, University Hall. Checks should be drawn to the order of Columbia University and presented in person or forwarded by mail to the office of the Bursar. This office is open daily from 9:30 a. m. to 3:30 p. m.; Saturday from 9:30 a. m. to 12 m. It will also be open every evening from 7 to 9:30 (except Saturday) from September 18 to October 4, 1918, but from October 7 to November 1, from 7 to 9, on Monday and Friday evenings only. It will be open every evening (except Saturday) from 7 to 9:30 from January 30 to February 14, 1919, but from February 17 to February 28, from 7 to 9, on Monday and Friday evenings only.

University fee, for students in Extension Teaching exclusively, for each year or any part thereof, \$5.

Tuition fee: the fee for each Session as announced in the description of the course.

The University Statutes provide that tuition fees, the University fee, and laboratory deposits are payable in advance. Registration will not be complete until such fees are paid. Payment of fees after the last day of registration, Winter Session, October 5, 1918, Spring Session, February 15, 1919, imposes automatically the statutory charge of \$5.00 for the privilege. Under the regulations, the privileges of the University are not available to any student until he has completed his registration.

The fees to be paid by students are subject to change at any time at the discretion of the Trustees.

Students in courses in local centers will pay either the fee arranged by the local center or the usual fees described above. They will pay fees to the treasurer of the local center unless otherwise directed. Extension Teaching students taking courses in local centers who desire to receive credit for their work must fulfil all the requirements of matriculation in the appropriate part of the University.

**Admission.** No examination is required for admission to courses offered in Extension Teaching, but in cases of doubt, students must satisfy the instructors concerned that they can pursue the courses with advantage. It is expected that

prospective students in all collegiate and professional courses shall have had a full secondary school education. The courses are open, unless otherwise stated, both to men and women. Students under eighteen years of age are not admitted to classes in Extension Teaching. Admission to a course is finally determined by the Director according to the qualifications of the student, and the privilege of attendance upon a course which the student is, for any reason, found unfitted to pursue with advantage, may be withdrawn.

Students of undergraduate or non-matriculate rank, not living at home, will be required to have their programs approved in the office of the Director before registration. They will also be required to file in the office before registration a letter certifying their good moral character, written by an authorized representative of the candidate's former school or by a responsible member of the candidate's community.

With students who intend to begin or resume regular attendance under any faculty of the University, the question of academic credit for Extension Teaching courses should in every case be considered and approved by the designated representative of the Committee on University Admissions. Proper blanks may be obtained in the office of Extension Teaching.

The admission and continuance upon the rolls are subject to the full disciplinary power of the University authorities as prescribed by the statutes of the University.

A matriculated student is expected to conform to the rules for registration of the college or school of which he is a member. Students who expect later to apply for credit must secure approval of their schedules before registration. Record of attendance will date for matriculated students from September 26, 1918, and February 5, 1919.

Matriculated students in the various schools of the University will be allowed to attend courses in Extension Teaching in accordance with the regulations of the several schools; they must, however, register and pay the fees in the same way as other students in Extension courses.

Students should avoid assuming too heavy a program. Those working for credit will not be allowed to register for more than eight points in each Session without securing the consent of the Director.

Students admitted from other colleges are required to present certificates of honorable dismissal.

**Office.** The office of Extension Teaching is Room 301 University Hall. Full information as to this Department may be obtained at this office, which is open from 9 to 5 daily, Saturday 9 to 1. The office will be open every evening, except Saturday, from 7:30 to 9:30, from September 18 to October 4, 1918, and from January 30 to February 14, 1919. When the office is not open, students are referred to the office of the Registrar, Room 315 University Hall.

**Privileges.** Students taking six points each Session have the privileges of the Library and in the case of men, the University Gymnasium. Under certain conditions depending upon the amount of work taken, women students in Extension Teaching may reside in Whittier or Furnald Hall; men students in Hartley Hall or Livingston Hall. (See Residence Halls, p. 5.)

Attention is called to the restaurant service at the University Commons main-

tained for the use of students where a dining-room for men and women is located.

Rest rooms for women students are located on the first floor of Philosophy Hall at the left of the entrance, and in Room 709 Journalism Building, open in the morning and afternoon. A coat room in the basement of Journalism is provided for the use of students.

### **Residence Halls**

#### *Hartley and Livingston*

Concerning these University residences for men full information may be obtained by applying to the Superintendent of Buildings and Grounds of Columbia University. The privilege of residence in these dormitories is limited for men in Extension Teaching to students in good standing, pursuing programs aggregating not less than eight points each Session.

#### *Furnald Hall*

This University dormitory will be assigned to the use of women students in the academic year 1918-1919. The privilege of residence is limited for women in Extension Teaching to students in good standing, pursuing approved programs of work, aggregating not less than twelve points each Session. Detailed information in regard to rooms and rates in Furnald Hall may be obtained by application to the office of the Superintendent of Buildings and Grounds.

#### *Whittier Hall*

This hall of residence for women students will be open to women students in Extension Teaching in good standing pursuing approved programs of work aggregating not less than twelve points each Session. Detailed information in regard to rooms and rates will be sent to any address on application to the House Director of Whittier Hall, 1230 Amsterdam Avenue.

#### *Residence Outside the Halls*

Detailed information and advice concerning desirable rooms and boarding places for both men and women may be obtained by writing to Mrs. M. P. Kilpatrick, Room and Board Directory, Teachers College.

All women students under twenty-five years of age who are not living at home, are required to live in Furnald or Whittier Hall, or to obtain permission to do otherwise from the Adviser of Women in Extension Teaching, Miss Katharine C. Reiley. Such students will not be allowed to complete their registration until their proposed living arrangements have been approved by this officer, whose signature must be obtained. In general, younger women students are not expected to take rooms in places where no reception room is provided for their guests. Students may confer with the Adviser on any afternoon, except Saturday, between 2 and 4, in Room 301 University Hall, or if necessary by special appointment.

*All women students are required to consult with the Adviser of Women before engaging rooms offered by unauthorized persons.*

**Location.** Intramural collegiate and professional courses will be given at Columbia University. Extramural courses will be given at the Long Island



College Hospital, corner of Henry and Amity Streets Brooklyn, at Bridgeport, Fairfield, Garfield, Scranton, Springfield, Stamford, Trenton and Yonkers, and at centers where there may be sufficient demand.

Classes will also be conducted at the New York Chapter of the American Institute of Banking, 138 East 35th Street.

The most convenient means of access to the University are the Subway (Broadway Branch) to 116th Street, Columbia University Station, the Sixth or Ninth Avenue Elevated to 110th Street Station, and Broadway or Amsterdam Avenue surface lines.

**Calendar and Hours.** Columbia University opens on September 25 and Extension courses begin Thursday, September 26. The academic calendar calls for thirty weeks of actual class work. The examination period for the Winter Session begins January 27. The Spring Session will open February 5, and the Extension classes will begin on that date. The examination period for the Spring Session begins May 26. The examinations are given in the hours usually assigned to recitation and lectures. The calendar for Extension Teaching is the academic calendar of the University, except in regard to examinations. There will be no classes in Extension Teaching on the following days: Election Day, November 5; Thanksgiving Day and the two days following (November 28, 29 and 30); December 23 to January 4, inclusive; February 22; April 17 to 21, inclusive; May 30. There will be classes on February 12. See pp. 127, 128.

Extension courses are usually given in the afternoon after three o'clock, in the evening of every week day and on Saturday morning.

**Absences.** It is a student's duty to attend punctually each class or laboratory exercise in each course. For credit toward a degree or for a certificate of proficiency, attendance at nine-tenths of the sessions is required in addition to the proficiency attested by class work and examination. Absences are counted from the first meeting of the class in each Session.

A student may be absent without penalty in a Session as follows: from a course meeting once weekly, twice; from a course meeting twice weekly, three times; from a course meeting three times weekly, four times; from a course meeting four times weekly, five times; from a course meeting five times weekly, six times.

In case this limit is exceeded, a student receiving a grade of D shall not be entitled to credit for that course; a student receiving a grade of C or higher may submit a statement showing the cause of each absence. If, in the judgment of the Administrative Board, these causes were imperative, full or partial credit for the course may be assigned by the Director upon the recommendation of the Administrative Board, in accordance with the extent and reason of the student's absences and the standing attained in the course.

Tardiness counts as half an absence.

**Examinations.** Two examinations are regularly held, one at the close of the Winter Session, and the second on the termination of the course. The examinations are given in the hours usually assigned to recitations and lectures. A mid-term report is sent to the Director by the various instructors, approximately on November 15 and March 25. For examination at special times, the fee is \$5 for each course.

Students who fulfill the conditions of registration, attendance and accomplishment of work prescribed, together with the payment in full of the fee for the course, will receive a report of standing from the Registrar within three weeks after the close of each Session.

The student's performance in a course is reported according to the following grades: A, excellent; B, good; C, fair; D, poor (not passing); F, total failure. In graduate courses P indicates passed; F, failure. H indicates a record of satisfactory attendance only.

**The University Press Book Store.** The University Press Book Store, situated in the Journalism Building, supplies students and officers with text-books and other needed material at stated discounts from list prices. These discounts are fixed by the Trustees of the Columbia University Press. The store will be open daily from 8 a. m. to 6 p. m.; Saturday from 8 a. m. to 5 p. m. It will also be open in the evening from September 26 to November 1, and from February 5 to March 1, until 9 p. m.

**Architecture.** Students will receive the Certificate of Proficiency in Architecture when they have completed the following courses or their equivalents. It should be understood that this arrangement must remain more or less flexible or variable in order to suit the conditions of individual students. Such conditions may make it necessary, for instance, to postpone certain subjects in architecture while entrance deficiencies are made up; and again, subjects assigned to any year may be taken in an earlier year if in the latter courses any have already been cleared. Consequently, the curriculum may be considered one of indeterminate duration, although it should be possible to cover the required work in six years.

<i>Year</i>	<i>Winter Session</i>	<i>Spring Session</i>
I	eA1 Elements of Architecture	eA2 Applied Elements
	eA5 Shades and Shadows	eA6 Descriptive Geometry
	eA7I Freehand Drawing	eA72 Freehand Drawing
II	eA7 Perspective	eA10 Stereotomy
	eA27 Ancient Arch'l History	eA28 Medieval Arch'l History
	eA6I Elementary Design	eA62 Elementary Design
	eA73 Water Color Drawing	eA74 Water Color Drawing
III	eA15 Building Materials	eA16 Building Materials
	eA1I Mechanical Equipment of Buildings	eA12 Specifications
	eA29 Medieval and Renaissance Arch'l History	eA30 Renaissance and Modern Arch'l History
	eA63 Intermediate Design	eA64 Intermediate Design
	eA5I Principles of Planning	eA52 Principles of Composition
		eA82 Modeling
IV	eA3I Ancient Ornament	eA32 Ancient Ornament
	eA19 Structural Design	eA20 Structural Design
	eA65 Advanced Design	eA66 Advanced Design
V	eA75 Charcoal Drawing	eA76 Charcoal Drawing
	eA65 Advanced Design completed	eA66 Advanced Design completed
	eA33 Medieval Ornament	eA34 Medieval Ornament
VI	eA67 Thesis Design	eA68 Thesis Design
	eA77 Life Drawing	eA78 Life Drawing
	eA35 Modern Ornament	eA36 Modern Ornament

Courses in mathematics and in structural mechanics as follows will also be required: Advanced algebra (Math. e1 or e2); analytical geometry (Math. e3 or e4); calculus (Math. e75 or e78); and mechanics of construction (Str. Mech. eZ1-eZ2). These courses are not included in the schedule for the reason that their position in such an organized curriculum cannot be determined until the accomplishments of the individual student in these subjects are ascertained.

The work in design will follow the Calendar of Design issued by the Society of Beaux-Arts Architects. Candidates for the Certificate of Proficiency will be required to obtain awards as indicated on pp. 25, 26 in the description of courses in design, but in all cases registration for design must continue for at least six sessions regardless of the number of awards obtained.

**Business.** Columbia University through its Extension Teaching Department offers evening courses in business, including a complete series of classes for students planning to take the state examinations for certified public accountant.

The object of these courses is to give a thorough training for those who desire to enter upon a business career immediately after leaving high school, and also to provide for persons already engaged during the day, instruction at night in the principles of business, commerce and finance.

At the close of each Session students will receive from the Registrar a report of standing, and those who have completed the course in a manner satisfactory to the Administrative Board will receive a certificate signed by the Director of Extension Teaching. In order to be eligible for a certificate covering the entire course a student must secure 48 points. This course is described in detail in a special circular which will be mailed upon request:

*Schedule of Classes for the Certificate in Business:*

FIRST YEAR	
<i>Winter Session</i>	<i>Spring Session</i>
Business e23	Business e24
Business e73	Business e74
Business e61	Business e62
SECOND YEAR	
<i>Winter Session</i>	<i>Spring Session</i>
Business e25	Business e26
Business e27	Business e28
Business e75	Business e76
Economics e1	Economics e2
THIRD YEAR	
Business e129	Business e130
Business e131	Business e132
Business e133	Business e134
Business e7	Business e8
Elective (2 points)	

**School of Business.** Graduates of high schools, who have satisfactorily completed in the Department of Extension Teaching work equivalent to that offered by Columbia College or Barnard College in the first two years, will be admitted to the School of Business. The degree of B.S. is conferred upon the



completion of the course in the School of Business. Those who desire to complete in Extension Teaching the two preliminary years of collegiate work, should follow the program suggested below, completing 64 points, including English eA1-A2, eB1-B2; two years of French or Spanish or German; Philosophy eA1-A2; History eA1-A2; Economics e1-2; Economics e5-6; Mathematics eA1 and eA3; and 15 points in electives. See special circular.

**College Course.** Students who are unable for financial reasons to enter college upon graduation from a secondary school, may profitably continue their training through Extension Teaching classes while employed during the daytime, with the expectation of being later admitted to Columbia College with advanced standing as candidates for the degree of Bachelor of Arts. The Director of the University Admissions or the Dean of Columbia College will be glad to consult with such students and to advise them as to the courses which may most profitably be taken by them in Extension Teaching.

### *Arrangement of Collegiate Subjects*

Students in Extension Teaching should regard as of first importance the selecting of subjects of study which are immediately of value to them and not undertake their work with the primary object of obtaining academic recognition. They will be assisted in selecting their subjects of study in the office of the Director, Room 301 University Hall.

The following arrangement of courses is given here as an aid in the grouping of subjects and not as indicating any convenient route to a degree.

FIRST YEAR		THIRD YEAR	
	<i>College Points</i>		<i>College Points</i>
English eA1-A2 . . . . .	6	Philosophy . . . . .	4
Modern language . . . . .	6	History eA1-A2 . . . . .	6
Mathematics . . . . .	4	English e17-18 . . . . .	4
	—	Modern language . . . . .	2
	16		—
			16
SECOND YEAR		FOURTH YEAR	
	<i>College Points</i>		<i>College Points</i>
English eB1-B2 . . . . .	4	English e23-24 . . . . .	4
Philosophy eA1-A2 . . . . .	6	Zoology e1-2 . . . . .	4
Modern language . . . . .	6	Economics e1-2 . . . . .	6
	—	Politics e1-2 . . . . .	6
	16		—
			20
FIFTH YEAR			
	<i>College Points</i>		
Modern language . . . . .	6		
History . . . . .	6		
Science . . . . .	8		
	—		
	20		
Total . . . . .	88		



**College Entrance Course.** Mature students who are unable to attend a secondary school and other persons who are engaged in business throughout the day may prepare themselves for college by pursuing courses in Extension Teaching. These courses are not open to immature students nor to any who should be in high school or a preparatory school. The following schedule is suggested for those who desire a complete training in subjects required for college entrance. Students may elect the complete course or only such classes as they may need.

In order to count any course in Extension Teaching toward admission, candidates must, before beginning the course, secure written permission from Professor A. L. Jones, Director of Admissions, Room 321 University Hall; except candidates for admission to Barnard College, who must secure written permission from the Dean of Barnard College.<sup>1</sup>

Persons of unusual ability may complete the entire schedule given below in less than four years; this is true especially of those who may be able to attend in the late afternoons as well as at night.

<i>First Year</i>	<i>Third Year</i>
English eW1-W2	English eY1-Y2
One elementary language	History eX1-X2
Mathematics eX3, eX6	Physics eA1-A2
<i>Second Year</i>	<i>Fourth Year</i>
English eX1-X2	Chemistry eA1
Intermediate language	Mathematics eA1, A2
Mathematics eY1	Elective subjects

A complete list of courses given in Extension Teaching that may be offered for entrance credit follows:

Botany e1-2, for botany  
 Chemistry eA1 or eA2, for chemistry  
 Drawing eW1 or eW2, for drawing  
 English eW1-W2 and eX1-X2 for English 1  
 English eY1-Y2, for English 2  
 French eA1-A2, for elementary French  
 French eB1, for intermediate French  
 French eB2, for advanced French  
 Geography e25-26, for physical geography  
 German eA1-A2, for elementary German  
 German eB1-B2, for intermediate German  
 German e5a-6a, for advanced German  
 Greek e1-2, for Greek *a*, *b* and *g*

<sup>1</sup> While work done in University Extension Teaching courses is not primarily accepted in lieu of entrance examinations to Barnard College, entrance conditions may be removed by a grade of at least C, subsequently obtained in the appropriate Extension courses. In exceptional cases, for reasons of weight, the Dean may grant permission to a student to count an Extension course for entrance credit, without her having taken an entrance examination in the subject.

Greek  $\epsilon_3$ , for Greek  $\epsilon$   
 History  $eX_1$  or  $eX_2$ , for History  $d$   
 History  $eX_3$  or  $eX_4$ , for History  $a$   
 Italian  $e1-2$  for elementary Italian  
 Latin  $eX_1-X_2$  or  $eX_8$  and  $eX_3$ , for second-year Latin, Latin 3  
 Latin  $eY_1$  or  $eY_8$ , for Vergil, Latin 5  
 Latin  $eY_3$  or  $eY_4$ , for Cicero, Latin 4  
 Latin  $eY_5$  or  $eY_6$ , for advanced Latin prose composition, Latin 6  
 Mathematics  $eX_1$  or  $eX_2$  or  $eX_3$ ,  $eX_6$ , for elementary algebra  
 Mathematics  $eX_1$  or  $eX_2$  or  $eX_5$  or  $eX_6$  for algebra, quadratics and beyond  
 Mathematics  $eY_1$  or  $eY_2$ , for plane geometry  
 Mathematics  $eA_1$ ,  $eA_3$ ,  $e1$  (any two), for advanced mathematics  
 Physics  $eA_1-A_2$ , for elementary physics  
 Spanish  $e1-2$ , for elementary Spanish  
 Zoology  $e1-2$ , for zoology

**Engineering Courses.** In taking classes in engineering and allied subjects in Extension Teaching a student may adopt one of two methods in arranging his studies. (1) He may select only the class or classes in which he is especially interested, and which will be of most immediate assistance to him in his present work. In every case he must be careful that he possess all the prerequisites for each course which he proposes to pursue. Extension Teaching offers many classes of this nature, planned especially for mature students already engaged in engineering work and at liberty to devote only a few evenings a week to professional study. Such courses do not in themselves lead to any degree, though some of them bear credit applicable to degrees, when other conditions have been fulfilled, as stated below. (2) The student may plan his work in such a way that when supplemented by day attendance, after having completed satisfactorily the entrance requirements, it will lead ultimately to a degree in engineering. No degree is given for work taken exclusively in the evening.

A student desiring to matriculate in the Schools of Mines, Engineering and Chemistry is required to present, in addition to the regular four years of the preparatory school, at least three years of collegiate work.

Extension Teaching has provided a schedule whereby a student by studying in the evening can complete this collegiate preparation. He will then be allowed to enter the Schools of Mines, Engineering and Chemistry, provided always that he has satisfied the requirements in regard to the work of the preparatory school. The collegiate course, outlined below, is that recommended by the Faculty of Applied Science in Columbia University. It presupposes a full four-year high school course, including, among other subjects, intermediate algebra, solid geometry, trigonometry, physics, chemistry, four years of English and three years of a modern language.

In order to avoid conflicts the subjects should generally be taken in the order suggested, though in many cases the program will necessarily be rearranged to suit the needs of the individual student. All persons thinking of pursuing this course are urged to confer with the officers of Extension Teaching in Room 301

University Hall. A few subjects in the third, fourth and fifth years are not given at present in Extension Teaching, but they will be added as the need arises.

## FIRST YEAR

*Winter Session*

English eA1 . . . . .	3
Mathematics e1 . . . . .	3
Physical Education eA1 . . . . .	2
History eA1 . . . . .	3
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11

*Spring Session*

English eA2 . . . . .	3
Mathematics e4 . . . . .	3
Physical Education eA2 . . . . .	2
History eA2 . . . . .	3
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11

## SECOND YEAR

Mathematics e55 . . . . .	4
Philosophy eA1 . . . . .	3
English e17 . . . . .	2
English eB1 . . . . .	2
Economics e1 . . . . .	3
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14

Mathematics e56 . . . . .	
Philosophy eA2 . . . . .	
English e18 . . . . .	2
English eB2 . . . . .	2
Economics e2 . . . . .	3
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14

## THIRD YEAR

Chemistry e3 . . . . .	5
French eB5 or German eE1 . . . . .	3
Mathematics e57 . . . . .	3
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11

Chemistry e4 . . . . .	5
French e4a or German eE2 . . . . .	3
Mathematics e22 . . . . .	3
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11

## FOURTH YEAR

Chemistry e11 . . . . .	5
Mechanics e1 . . . . .	2
Elective . . . . .	2
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9

Chemistry e12 . . . . .	5
Physics e6 . . . . .	6
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11

## FIFTH YEAR

Mechanical Drawing e1 . . . . .	2
Mechanical Drawing e3 . . . . .	2
Physics e7 . . . . .	7½
Physics e49 . . . . .	1½
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13

Mechanical Drawing e2 . . . . .	2
Mechanical Drawing e4 . . . . .	2
Physics e8 . . . . .	7½
Physics e50 . . . . .	1½
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13

Electives . . . . .	3
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Total . . . . . 124

Students desiring to secure a baccalaureate degree in addition to the professional degree should plan to take the last year of the above course in Columbia College.

A scholarship, affording free tuition in the graduate courses of the Schools of Mines, Engineering and Chemistry will be given each year to the student who completes the above outlined evening course with the highest record.

**Law.** In order to secure the degree of Bachelor of Laws from Columbia University, a student must present 94 points of collegiate study before entering the

course. Students planning at some future time to study law are, therefore, advised to complete the collegiate work outlined on page 9, which, when supplemented by one course of six points, will answer the entrance requirements provided the student has also satisfactorily completed the 15 units of high school studies required for entrance to college.

**Medicine.** In order to enter the College of Physicians and Surgeons in Columbia University, students must present at least two years of collegiate study, amounting to at least 72 points in addition to the regular high school preparation.

This work must include one year of physics, one year of inorganic chemistry based on college entrance chemistry, one-half year of qualitative analysis, one-half year of organic chemistry, one year of biology, two years of college English, and the equivalent in either French or German of Courses A and B as prescribed by Columbia College. Students should obtain the current announcement of the College of Physicians and Surgeons where these requirements are stated in full.

Students intending later to study medicine may complete the evening collegiate course outlined on page 9, which will answer the collegiate requirements for admission. It is necessary, however, that they include advanced courses in chemistry (two years consisting of general inorganic, qualitative and organic), physics, zoology (one full year each), English, two years, and French or German at least one year beyond the elementary requirement.

**Premedical course at The Long Island College Hospital.** Columbia University offers a two-year course of collegiate training at The Long Island College Hospital, Amity and Henry Streets, Brooklyn, N. Y., for students who intend to enter that institution. This course of two years will be useful to students who desire to enter other medical schools. (See special circular.)

**Optics.** A two-year technical course in practical optics, leading to a certificate issued by the University, is given by Extension Teaching. The required classes in each year are mentioned in the outline given below. A special circular describing this series and giving full information concerning the entrance requirements may be obtained from the Secretary of the University. Two scholarships covering all tuition fees in practical optics are awarded annually by the American Optical Company of Southbridge, Massachusetts.

#### FIRST YEAR

- Optometry A1 Algebra, geometry and trigonometry (Review)
- Physics A1-A2 General elementary physics
- Optometry 1-2 Theoretical optics
- Optometry 3-4 General anatomy with special reference to the anatomy and physiology of the eye
- Optometry 6 Practical optics
- Optometry 8 Theoretical optometry

#### SECOND YEAR

- Optometry 9-10 Theoretical optics
- Optometry 11-12 Physiological optics
- Optometry 13-14 Practical optics
- Optometry 15-16 Theoretical optometry
- Optometry 17-18 Pathological conditions of the eye
- Optometry 19-20 Practical optometry



**Secretarial Studies.** The Department of Extension Teaching has provided for men and women a series of courses given in the late afternoon and evening which will lead to a certificate in secretarial studies.

The object of these courses is properly to equip students who desire to become private secretaries or to hold important positions in offices as assistants to public officials or to persons engaged in professional pursuits. Students who undertake these courses in full must have had a high school education or its equivalent. The complete series will demand two years, although this may be reduced by attendance at Summer Session. Students may make use of both the late afternoon and evening courses. These are described in detail in a special circular, mailed upon request.

*Courses leading to a Certificate in Secretarial Studies:*

	<i>Points</i>
Stenography e1-2, Typewriting e1-2, counted as . . . . .	8
English eA1-A2 . . . . .	6
Modern languages . . . . .	12
Secretarial correspondence e1-2 or Business English e1-2 . . . . .	6
Business e7-8 (Business Administration) . . . . .	4
Secretarial Bookkeeping . . . . .	4
Typography . . . . .	2
Elective . . . . .	6
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Total . . . . .	48

Students may secure the degree of B.S. by pursuing secretarial studies in the School of Business. See special circular.

**The Institute of Arts and Sciences.** The institute of Arts and Sciences, established by action of the Trustees of Columbia University on February 3, 1913, is a division of the Department of Extension Teaching. The aim of the Institute is to provide a popular late afternoon and evening program consisting of general lectures and events of a cultural nature.

The program is planned for busy men and women. Its scope includes single lectures and short series of lectures, of not over six, on history, literature, art, music, geography, science, and on current economic and social problems; it comprises also illustrated travel lectures, recitals, dramatic readings and vocal and instrumental as well as chamber music concerts.

The program is subscribed for as a whole. The annual dues are \$10 payable in advance with an enrolment fee of \$5 payable only once provided the enrolment does not lapse.

A member of the Institute is entitled to free admission for himself and one other person to all the lectures and other events on the regular evening program, but in the afternoon only one person is admitted on the ticket. The ticket is transferable. Altogether the membership ticket includes free admission to approximately 250 lectures, readings, concerts, recitals, etc., throughout the season. The program continues from October to April.

The University auditoriums are used. Memberships are accepted at any time and are good for one calendar year from the first of the month nearest the time of enrolment.

A special pamphlet describing in detail the program of the Institute will be mailed upon request.

**For the Degrees of Master of Arts and Doctor of Philosophy under the Faculties of Political Science, Philosophy and Pure Science.** The courses in Extension Teaching which have been approved by the Faculties of Political Science, Philosophy and Pure Science and by the Executive Committee of the University Council may be counted toward the fulfillment of the residence requirements for the degrees of Master of Arts and Doctor of Philosophy. These courses are numbered 100 and above and marked Credit II.

The Announcement of the Faculties of Political Science, Philosophy and Pure Science, which will be sent upon application to the Secretary of the University, contains full information with regard to fellowships, scholarships, prizes, student employment, appointments, University and tuition fees, and all other University matters of interest to advanced students. It contains also a statement of the University requirements for the degrees of Master of Arts and Doctor of Philosophy and should be consulted by every candidate for those degrees.

**For the Degree of Master of Science.** The degree of Master of Science is awarded as a graduate professional degree under the Faculty of Applied Science, the Faculty of Practical Arts, the School of Architecture, and the School of Business. For information with regard to candidacy for this degree application should be made to the Dean or Director of the Faculty or School concerned.

**Regulations Governing Credit toward the Degrees of A.B. in Columbia College and Barnard College and B.S. in Teachers College.** Students of Columbia College, Barnard College and Teachers College will be allowed to attend Extension courses which are approved by the Committees on Instruction and will be allowed to count them toward the degrees of A.B. and B.S. under the following regulations:

1. The election of Extension courses must be approved in advance by the Committees on Instruction.
2. Students will not be allowed to exceed a total of 16 hours in Barnard College, or 16 hours in Teachers College including the hours of Extension courses, save for reasons of weight and by the special permission of the Committees on Instruction.
3. Students desiring these courses to count toward the degrees of A.B. and B.S. must obtain at least a grade of C.
4. Matriculated students electing Extension courses after having obtained the approval of the Committees on Instruction must register for these courses at the office of the Registrar and pay the fees required for such courses. Teachers College students taking Extension courses must register for such work at the Registrar's office of Teachers College and pay the fees therefor in Teachers College.
5. No degree is given for undergraduate courses taken exclusively in Extension Teaching.

All students who intend to apply for advanced credit in Columbia College for work done in Extension Teaching should have the authorization of the Office of Admissions.

In order to obtain such authorization the student should submit his complete previous record. This data should be supplied at the earliest possible moment.

Students who desire credit in Barnard College must make all their arrangements through the Dean of Barnard College.

**Courses in Teachers College.** Teachers College in its School of Education offers to matriculated students a number of its regular courses at hours in the afternoons and on Saturday mornings which are convenient to teachers. These courses include the history and philosophy of education, educational administration, educational psychology, secondary education, elementary education, kindergarten education, and certain courses on the methods of teaching academic subjects.

Teachers College offers also in its School of Practical Arts, at similar hours and in the evenings, regular and special classes in foods and cookery, sewing and textiles, household administration, nursing and health, household chemistry, fine arts, music, physical education, wood-working, metal-working, drawing, designing, etc. The special classes in the practical arts for non-matriculated and Extension students are fully described on pp. 98 ff. of this bulletin and are open to all who are qualified to enter them.

For further information concerning courses for matriculated students, see the circular of *Afternoon, Evening and Saturday Courses* which may be obtained from the Secretary of Teachers College.

**Relation of Extension Teaching to other University Work.** 1. The requirements for the degree of Master of Arts are stated in full in a bulletin entitled *Instructions for Candidates for the Degrees of Master of Arts and Doctor of Philosophy*, which will be sent upon application to the Secretary of the University. This bulletin should be consulted by all students electing graduate courses.

2. Students taking Extension courses who desire to become candidates for the degree of Bachelor of Arts or Bachelor of Science or for professional degrees in Science, Law, Medicine, Business and Practical Arts should make application to be received as such to the Director of Admissions, Room 321 University Hall. The requirements for admission to the University as a candidate for baccalaureate degrees are set forth in the bulletin, *Entrance Examinations and Admissions*, 1918-1919, which may be obtained on application to the Secretary of the University.

3. Students taking Extension courses who desire to become candidates for a diploma in teaching or the degree of Bachelor of Science in Practical Arts should make application to be received as such to the Secretary of Teachers College. For full information in reference to the requirements for admission to the School of Education or the School of Practical Arts of Teachers College, apply to the Secretary of Teachers College.

4. Students using Extension courses for the purpose of securing entrance credits should consult Professor Adam Leroy Jones, Room 321 University Hall. For admission to Barnard College, students should consult the Dean of Barnard College before registering.

**Local Centers.** To facilitate the work of instruction away from the University, the Administrative Board may institute local centers. Local centers may be established wherever a local community or a local organization undertakes to offer, year by year, one or more of the Extension courses of the University. Local boards of education, teachers' associations, schools, societies and clubs desirous of offering Extension courses may be constituted local centers. In



general, however, a special local committee (president, secretary, treasurer, and five members representing the particular community) is the usual organization of the local center.

Local centers are responsible, through the local committee, for the effective arrangement of Extension courses they offer. They determine the courses in cooperation with the Director; they enlist local interest; they provide, by fees or the sale of tickets or otherwise, for all the expenses of their work—the course fee, the cost of syllabi, the travelling expenses of the lecturer, lecture-hall, janitor, printing and advertising, and when lectures are to be illustrated they must provide the lantern and operator. The Administrative Board will establish and conduct local centers where suitable arrangements may be made and sufficient guarantees secured.

### Enrolment

Year	Morningside	Extramural	Total
1910-11	922	390	1312
1911-12	1329	271	1600
1912-13	2016	296	2312
1913-14	2664	723	3387
1914-15	3407	754	4161
1915-16	3960	821	4781
1916-17	5328	680	6008
1917-18	5944	713	6657

The attention of Extension Teaching students is called to the graduate, college and professional courses given during the summer in the day and evening, from July 8 to August 16. Address the Secretary of the University.



## COURSES OF INSTRUCTION

NOTE. The University reserves to itself the right to withdraw or modify these courses as may seem wise.

Courses corresponding and equivalent to prescribed courses of Columbia College are designated by letters A, B. A<sub>1</sub>, B<sub>1</sub> refer to the Winter Session (September-January) in such a course; A<sub>2</sub>, B<sub>2</sub> to the Spring Session (February-May). In numbered courses, odd numbers designate the Winter Session, even numbers the Spring Session.

In the statement of each course the prerequisites are indicated except that the equivalent of the first half of a hyphenated course (e. g., Botany *ei-2*) is usually assumed to be a prerequisite for admission to the second half.

**Credits.** For courses numbered 100 to 299, inclusive, undergraduate credit will be determined by the various faculties under which the student intends to apply for such recognition. For entrance credits, see pp. 10, 11.

The question of credits for Barnard College, Columbia College and College of Physicians and Surgeons must be determined finally on consultation with the appropriate Committee on Instruction.

All courses marked Credit I—May be counted toward the degrees of A.B. and B.S., in all parts of the University where these degrees are given, and toward appropriate diplomas in teaching. See p. 15. For other courses, which under certain conditions may be offered for credit by candidates for the A.B. or B.S. degree, see Credit II.

All courses marked Credit II—May be offered by graduate students toward the higher degrees. Open also to undergraduates on the approval of the appropriate Committee on Instruction obtained in advance.

All courses marked Credit IV—May be counted for matriculated students in the School of Practical Arts toward the degree of B.S. See p. 98.

All courses marked Credit V—May be counted toward the appropriate degrees in the Schools of Mines, Engineering and Chemistry, and Architecture.

All courses marked Credit IX—May be counted toward the degree of B.S. in Business.

Any course numbered 100 or above may be counted for undergraduate degrees under the general rules.

The fees and points as stated with the various courses are for each Session. In the case of non-credit courses, the number of points is published merely to give a general idea of the amount of work required of the student.

### Agriculture

Columbia University, through the Extension Teaching Department, offers courses in agriculture. These courses may, with the approval of the Committee on Instruction, form part of the curriculum leading to the degree of A.B. for students of Columbia College. They will also be open to students who desire to take only courses in agriculture.

Students desiring to undertake courses in agriculture should consult before registering Professor O. S. Morgan; office hours, 10-11 a. m., Wednesday, Thursday, and Friday, and at other hours by appointment. Room 511 Schermerhorn Hall. He will be glad to assist students in arranging their programs, and will outline classes in agriculture to cover the student's partial or complete time for one, two, or more years of study. Students who have special objects in view, such as preparing to become farm superintendents, or who desire to equip themselves as specialists should consult him about their programs. There is active demand from owners of farms for students adequately trained in technical and practical agriculture.

**Agriculture e1-2—Introduction to agriculture.** Lectures and laboratory. Credit I, IV. 3 points each Session. Fee \$18 each Session. Professor O. S. MORGAN

Section 1—9:10-10:50 a. m., Saturday (lectures), Room 505 Schermerhorn; 11 a. m.-12:50 p. m., Saturday (laboratory), Room 502 Schermerhorn

Section 2—7:20-9 p. m., Wednesday (lectures), Room 505 Schermerhorn; 11 a. m.-12:50 p. m., Saturday (laboratory), Room 502 Schermerhorn

The object of this course is to give the student entering the study of agriculture a clear understanding of the main problem and principles of present-day scientific agriculture, particularly as practised in the eastern United States. All students undertaking the study of agriculture for the first time should take at least the Winter Session of this course.

Winter Session. The essentials of crop production as affecting the American cereal crops. Special attention will be given the following: crop rotation, fertilizers, manures, liming, varieties, cultural methods, food values, harvesting, storage, farm machinery, seed improvement, testing, and cost production, especially as relates to corn culture.

Spring Session. The production of small grains, hay, grass, legumes, potatoes, and roots. The management of hay fields, clovers, alfalfa, vetches, cow peas, cereals for hay; pastures, seeding and management; the production of root crops.

Laboratory work will include the study of the characteristics of farm crops, judging and scoring of corn and other grains, testing for germination and purity, reports on special topics, pot culture in the greenhouse and excursions to industrial plants and farms.

**Agriculture e1a-2a—Lectures only.** 2 points each Session. Professor O. S. MORGAN

9:10-10:50 a. m., Saturday, or 7:20-9 p. m., Wednesday, Room 505 Schermerhorn. Fee \$12 each Session

**Agriculture e3-4—Soils and fertilizers.** Lectures and laboratory. Credit I, IV. 3 points each Session. Professor O. S. MORGAN

2:10-3:50 p. m., Thursday (lectures), Room 505 Schermerhorn; 2:10-4 p. m., Friday (laboratory), Room 102 Schermerhorn. Fee \$18 each Session

Principles of soil management, given in the Winter Session, deals with the origin, composition and properties of soils; the physical, chemical, and bacteriological factors; plowing and tillage; soil types and cropping systems as related to farm management. Excursions.

Fertilizers, manures and soil amendments, given in the Spring Session, deal with soils and crop problems in agriculture from the standpoint of soil fertility, the supply in the form of manure, etc., and the practical economic consideration of maintaining and increasing the crop-producing power of lands. Cover cropping, green manures, liming and drainage are fully considered. Special plant studies on soils and fertilizers in the laboratory for soil analysis.

**Agriculture e3a-4a—Lectures only.** 2 points each Session. Professor O. S. MORGAN

2:10-3:50 p. m., Thursday, Room 505 Schermerhorn. Fee \$12 each Session

**Agriculture e5—Introduction to poultry husbandry.** Lectures and laboratory. Credit I, IV. 3 points Winter Session. Professor BENJAMIN

7:30–9:20 p. m., Tuesday and Friday (lectures), Room 505 Schermerhorn;

7:30–9:20 p. m., Saturday (laboratory), Room 502 Schermerhorn. Fee \$18

*This course begins October 15 and ends November 23.*

Designed to include practical information which should be known by those of city or suburban communities who are keeping poultry or who contemplate doing so. Lectures, with and without lantern slides, demonstrations and opportunities for the students to do a considerable amount of practical work themselves make up the course. The course comprises all phases of poultry work, including housing, feeding, incubating, brooding, diseases, rearing, selection of stock, caponizing, preparing eggs and poultry for market, handling private trades, and preservation of poultry and eggs. Opportunities for excursions, special conferences and discussions will be freely offered throughout the course.

NOTE. A companion course will probably be offered in the Spring Session.

**Agriculture e5a—Lectures only.** 2 points Winter Session. Professor BENJAMIN  
7:30–9:20 p. m., Tuesday and Friday, Room 505 Schermerhorn. Fee \$12

**Agriculture e11-12—Materials in field crops and soils for supervisors of agriculture in high schools.** Lectures and laboratory. Credit I, IV. 2 points each Session. Professor O. S. MORGAN

Lectures, 11–11:50 a. m., Wednesday and Friday, Room 505 Schermerhorn.  
Fee \$12 each Session

The problems of plant production will be studied whenever possible from the standpoint of principles. Rotation of crops, drainage and irrigation, liming, humus, green manures, stable manures, fertilizers, soil types and soil inoculation, as well as other chief factors in the culture of typical American field and forage crops will form the subject-matter of class work.

Laboratory exercises will consist of (1) work on crops, on soils and fertilizers in pot and jar tests in the greenhouse; (2) excursions to industrial plants and special farms; and (3) a report on a special agricultural problem. Teachers who are unable to attend Agriculture e11-12 may elect Agriculture e1-2 or e1a-2a, which will answer the purpose.

**Business e40—Agricultural economics.** Credit IX. 2 points Spring Session.  
Professor O. S. MORGAN

4:10–5 p. m., Wednesday and Friday, Room 505 Schermerhorn. Fee \$12

A study of agricultural problems from the economic standpoint. The principles of production and marketing of farm products are discussed; the course includes such subjects as land conditions, values, and development; land rents; size of farms and significance; intensive and extensive methods; farm labor, wages, and profits; agricultural credit; the place of live stock in agriculture; and the costs of production; the various methods of marketing and farmers' organizations.

**Agriculture e15—Tree fruits.** Lectures and laboratory. Credit I, IV, in special cases. 3 points Winter Session. Mr. KAINS

7–8:40 p. m., Monday (lectures), Room 505 Schermerhorn; 7–8:50 p. m.,

Thursday (laboratory), Room 502 Schermerhorn. Fee \$18

The principles underlying the production, management, and disposal of tree fruits will be the major consideration of the Winter Session. Emphasis will be laid on the scope, adaptation, and locations of fruit growing—tillage, fertilization, propagation, planting, inter- and cover-cropping, spraying, harvesting, storing, marketing, disposal of low grade fruit, pruning and rejuvenation of neglected trees. Excursions will form part of the laboratory work.

**Agriculture e15a—Tree fruits.** Lectures. Credit I, IV, in special cases.  
2 points Winter Session. Mr. KAINS

7–8:40 p. m., Monday, Room 505 Schermerhorn. Fee \$12

Lectures as outlined for Agriculture e15.



**Agriculture e16—Home garden fruits.** Lectures and laboratory. Credit I, IV, in special cases. 3 points Spring Session. Mr. KAINS  
7-8:40 p. m., Monday (lectures), Room 505 Schermerhorn; 7-8:50 p. m., Thursday (laboratory), Room 502 Schermerhorn. Fee \$18

The study of the culture of bush fruits, grapes and strawberries, dwarf tree fruits, and to some extent standard tree fruits will comprise the work of the Spring Session. Considerations similar to those developed in the course on tree fruits will be discussed.

**Agriculture e16a—Small fruits.** Lectures. Credit I, IV, in special cases. 2 points Spring Session. Mr. KAINS

4:30-6:10 p. m., Monday, Room 505 Schermerhorn. Fee \$12

Lectures as outlined for Agriculture e16.

**Agriculture e17—Vegetable culture.** Lectures and laboratory. Credit I, IV, in special cases. 3 points Winter Session. Mr. KAINS

4:30-6:10 p. m., Thursday (lectures), Room 505 Schermerhorn; 4:30-6:20 p. m., Monday (greenhouse work). Fee \$18

The vegetable culture work will comprise a study of the preparation of soil and composts; seed testing and sowing; hot-beds and cold frames, transplanting, companion and succession cropping; tillage, spraying, harvesting, storage, marketing, disposal of low grade products in kitchen; farm and market gardening.

**Agriculture e17a—Vegetable culture.** Lectures. Credit I, IV, in special cases. 2 points Winter Session. Mr. KAINS

4:30-6:10 p. m., Thursday, Room 505 Schermerhorn. Fee \$12

Lectures as outlined for Agriculture e17.

**Agriculture e18—Flower culture.** Lectures and laboratory. Credit I, IV, in special cases. 3 points Spring Session. Mr. KAINS

4:30-6:10 p. m., Thursday (lectures), Room 505 Schermerhorn; 4:30-6:20 p. m., Monday (laboratory), Room 502 Schermerhorn. Fee \$18

The purpose of the flower culture course is to familiarize the student with the best annuals, herbs and shrubs, their propagation, and management indoors and out. Discussions will be under heads similar to those in the course in vegetable culture and upon such phases of floriculture as house flowers, window gardening, flower beds, care of shrubbery, vines, shade trees, pruning of ornamentals, and tree surgery.

**Agriculture e18a—Flower culture.** Lectures. Credit IV, in special cases. 2 points Spring Session. Mr. KAINS

4:30-6:10 p. m., Thursday, Room 505 Schermerhorn. Fee \$12

Lectures as outlined for Agriculture e18.

### *Graduate Courses in Agriculture*

**Agriculture e101-102—Agronomy.** Credit III. 3 points each Session. 8 hours laboratory. Conference weekly. Report optional. Professor O. S. MORGAN

Hours to be arranged. Fee \$18 each Session

The course consists of a study of the principles underlying the production and management of cereal and forage crops.

Advanced studies of pot, jar, and cylinder soil's work is the laboratory requirement.

Prerequisite: Agriculture e1-2, e3-4, or their equivalent, and satisfactory preparation in botany and chemistry.



**Agriculture e211-212—Research in soil, management.** Fertilizers, soil amendments, soil toxins as related to plant production. Credit III. 3 points each Session. 8 hours laboratory. Conference weekly. Report required. Professor O. S. MORGAN

Fee \$18 each Session.

The work consists of fertilizer and crop tests of soils that have been surveyed. Careful laboratory tests and studies are emphasized.

Prerequisites: Agriculture e1-2, e3-4, e101-102, or their equivalent.

**For courses in agricultural economics, see p. 31**

### Architecture

The following afternoon and evening courses in architecture, offered in the year 1918-1919, are open to all qualified students without examination. They correspond, in part, to the work given in the School of Architecture, and equivalent courses will count toward the degree of Bachelor of Architecture for those who can present the required credentials for admission to the School of Architecture (see Announcement of the School of Architecture).

A typical program of study in architecture leading to the Certificate of Proficiency is given on p. 7. This program is recommended to all students beginning the study of architecture, even though they are not candidates for the Certificate, since it presents a logical and orderly system of instruction.

For detailed information in regard to the Certificate course see special bulletin.

For courses in mathematics and structural mechanics, see pp. 71-73 and 47.

**Architecture e1—The elements of architecture.** Credit V. 6 points Winter Session. Professor HARRIMAN

8-9:40 p. m., Tuesday and Friday. Room 408 Avery, Drafting in 504 Avery. Fee \$36

Mouldings, the orders, intercolumniation and superposition, balustrades, arcades, doors, windows, roofs, spires, vaults, domes.

**Architecture e2—Applied elements.** Credit V. 8 points Spring Session. Professor HARRIMAN

8-9:40 p. m., Tuesday and Friday. Room 504 Avery. Fee \$48

Exercises in applications of elementary architectural forms as given in Course e1; of shades and shadows as given in Course e5, both of which are prerequisite.

**Architecture e5—Shades and shadows.** Credit V. 4 points Winter Session. Mr. ALLEN

7-7:50 p. m., Monday, Wednesday, and Friday. Room 408 Avery. Fee \$24

Brief, accurate and unique methods for determining the shadows of geometrical lines, plane figures and solids; also of the principal architectural members; practical applications.

**Architecture e6—Descriptive geometry.** Credit V. 4 points Spring Session. Mr. ALLEN

8-8:50 p. m., Monday, Wednesday, and Friday. Room 408 Avery. Fee \$24

Rapid and unique methods of solving problems relating to right lines and planes; phenomena of lines and surfaces; tangent planes; intersections and developments.

Will not be given for less than ten students.

**Architecture e6a—Shades and shadows.** Credit V. 4 points Spring Session. Mr. ZOLLER

7-7:50 p. m., Monday, Wednesday, and Friday. Room 407 Avery. Drafting in 504 Avery. Fee \$24

Architecture e5 repeated in Spring Session.

Will not be given for less than ten students.

**Architecture e7—Perspective.** Credit V. 3 points Winter Session. Mr. ALLEN

8-8:50 p. m. Monday and Wednesday. Room 408 Avery. Drafting: 9-10:30 p. m., Wednesday. Room 504 Avery. Fee \$18

Brief, direct, and unique methods, using distance points, the office method; the perspective of shadows. Entourage.

Will not be given for less than ten students.

[ **Architecture e10—Stereotomy**

Will not be given in 1918-1919; will be offered in 1919-1920 ]

**Architecture e8a—Perspective.** Credit V. 3 points Spring Session. Mr. ALLEN

7-7:50 p. m., Monday and Wednesday. Room 408 Avery. Drafting: 8-9:40 p. m., Wednesday. Room 504 Avery. Fee \$18

Architecture e7 repeated in the Spring Session.

**Architecture e11—Mechanical equipment of buildings.** Credit V. 3 points Winter Session.

8-8:50 p. m., Monday and Friday. Room 403 Avery. Fee \$18

The principles of sanitation, the methods of sewage disposal, and the design of a modern plumbing system in accordance with the New York City Building Code.

The different methods of heating and wiring buildings and the advantages and disadvantages of each; the regulations of the New York City Building Code, and of the National Board of Fire Underwriters; the preparation of working drawings for heating and wiring contracts.

Will not be given for less than ten students.

**Architecture e12—Specifications.** Credit V. 3 points Spring Session.

8-8:50 p. m., Monday and Friday. Room 403 Avery. Fee \$18

An explanation of the general law of contracts; the different ways of preparing specifications for estimates, with the advantages and disadvantages of each; instructions to bidders; general clauses; rules to be observed in writing specifications and the different methods of arranging clauses.

Will not be given for less than ten students.

**Architecture e15-16—Building materials and construction.** Credit V. 3 points each Session. Mr. SANDERS

8-8:50 p. m., Tuesday and Thursday. Room 403 Avery. Fee \$18 each Session

Properties and tests of building materials. Carpentry, slow-burning construction, steel and iron construction, masonry, fireproofing, reinforced concrete and their appearance in buildings.

**Architecture e19-20—Structural design.** Credit V. 3 points each Session

7-7:50 p. m., Monday and Friday. Room 403 Avery. Fee \$18 each Session

Steel construction. The design of beams, girders and columns, and by graphical analysis of roof trusses, piers, arches, and retaining walls.

**Architecture e27—Ancient architecture.** Credit I. 2 points Winter Session. Curator BACH

4-4:50 p. m., Tuesday and Thursday. Room 408 Avery. Fee \$12

The ancient architecture of Egypt, Assyria, Persia, Greece, and Rome.

**Architecture e28—Medieval architecture (to Gothic).** Credit I. 2 points Spring Session. Curator BACH

4-4:50 p. m., Tuesday and Thursday. Room 408 Avery. Fee \$12

Early Christian, Byzantine, and Romanesque architecture in Italy, France, England, and Germany, analytical and critical discussion of the historic development, characteristics, and chief examples of the medieval styles.

**[ Architecture e29—Medieval and Renaissance architecture (beginning with Gothic)**

Will not be given in 1918-1919; will be offered in 1919-1920 ]

**[ Architecture e30—Renaissance and modern architecture**

Will not be given in 1918-1919; will be offered in 1919-1920 ]

**Architecture e31-32—Ancient ornament.** Credit I, V. 1 point each Session. Mr. HAMLIN

6-6:50 p. m., Friday. Room 407 Avery. Fee \$6 each Session

General classifications; origins, primitive and savage ornament; the historic ornament of Egypt, Assyria, Persia, Greece, and Rome, including Ægean, Cypriote, Phœnician, and Etruscan ornament; the development of the styles, the common motives and patterns of both architectural ornament and the minor arts. Periodic drawings.

No credit will be given for Architecture e31-32 unless taken with one other course.

**[ Architecture e33-34—Medieval ornament.**

Will not be given in 1918-1919; will be offered in 1919-1920 ]

**Architecture e35-36—Modern ornament.** Credit I, V. 1 point each Session. Mr. HAMLIN

6-6:50 p. m., Wednesday. Room 408 Avery. Fee \$6 each Session

The ornament of the Renaissance in Italy, France, Germany, Spain, the Netherlands, and England; American 'Colonial' ornament; developments in the 19th century in Europe and America; modern phases and tendencies in ornament. Periodic drawings.

No credit will be given for Architecture e35-36 unless taken with another course.

**Architecture e51—Principles of planning.** Credit V. 2 points Winter Session. Professor BORING and Mr. CORBETT

7-7:50 p. m., Wednesday. Room 407 Avery. Fee \$12

Elements and principles of plan grouping, composition of plans, sites, and surroundings analyzed, and application to problems explained. Characteristic classes of modern buildings studied in detail. Sketches and exercises in plan indication.

**Architecture e52—Principles of composition.** Credit V. 2 points Spring Session. Professor BORING and Mr. CORBETT

7-7:50 p. m., Wednesday. Room 403 Avery. Fee \$12

Elements described. Composition of elevation and sections, typical motives and specific types of buildings, with regard to expression, mass, profile, proportion, voids and solids, texture and color.

**Architecture e71-72—Drawing.** Credit V. 2 points each Session. Professor HARRIMAN

8-9:40 p. m., Monday and Thursday. Winter Session, Room 504 Avery; Spring Session, Room 502 Avery. Fee \$12 each Session

Drawing in outline; isometric; from cast, pencil, and charcoal. Architecture e71 is prescribed for e72.

[ **Architecture e73-74—Water colors**

Will not be given in 1918-1919; will be offered in 1919-1920 ]

**Architecture e75-76—Drawing.** Credit V. 2 points each Session. Professor HARRIMAN

8-9:40 p. m., Monday and Thursday. Room 502 Avery. Fee \$12 each Session

Advanced charcoal drawing from cast. Pen and ink.

Prerequisite: Architecture e71-72, or its equivalent.

[ **Architecture e77-78—Life drawing**

Will not be given in 1918-1919; will be offered in 1919-1920 ]

**Architecture e80—Drawing.** Credit V. 2 points Spring Session. Professor HARRIMAN

8-9:40 p. m., Monday and Thursday. Room 504 Avery. Fee \$12

Drawing in outline; isometric; from cast, pencil, and charcoal.

Architecture e71 repeated in Spring Session.

**Architecture e82—Modeling.** Credit V. 2 points Spring Session. Mr. GREGORY

1-4:20 p. m., Saturday. Room 202 Avery. Fee \$12

Modeling in clay from architectural details of ornament.

Will not be given for less than ten students.

## ARCHITECTURAL DESIGN

The courses in architectural design are conducted on the basis of a progressive series of problems and sketches. These are assigned in the form of programs issued at stated intervals. The work of the students, delivered at a designated time, is passed upon by a jury of architects, the whole program being in this respect identical with that of the Society of Beaux-Arts Architects. A registration fee of two dollars is required by this Society; this must be paid to the Chairman of the Committee on Education, 126 East 75th Street, New York City. More detailed information on this head will be found in a special folder to be obtained in Room 405 Avery Hall.

**Tuition Fees for Design.** The tuition fee in design, regardless of course, is \$25 per Session.

*Tuition fees are under no conditions returnable even though the full Session's work is not taken.*

Students are advanced in accordance with the regulations of the Society of Beaux-Arts Architects on the basis of values obtained.

NOTE. The full fee covers registration for six regular problems of the Beaux-Arts Society. No additional fee is required for ten-hour sketches or for archæology or measured drawing problems. Upon previous application to Curator BACH, 405 Avery Hall, qualified students may also be admitted without additional fee to other problem competitions conducted by the School of Architecture.



Sketches and problems will be accepted only after tuition fees have been paid as indicated above.

**Prerequisites for all courses.** Work in the elements of architecture and shades and shadows, corresponding respectively to Architecture e1, e2, and e5, or their equivalents, such equivalents to be determined by Mr. WARE **before registration.** Those who wish subsequently to transfer their credits to the records of the School of Architecture must also submit Descriptive Geometry, Architecture e6, or its equivalent.

Students may meet the instructors on September 23 and September 29 at 2 p. m., and on September 26 at 8 p. m., in Room 203 Avery.

**Architecture e61-62—Elementary design.** Credit V.\* 20 hours. Associate WARE and Mr. CORBETT

Fee, see above

Major and minor problems corresponding to the Class B Analytique Problems of the Beaux-Arts Institute of Design.

**Architecture e63-64—Intermediate design.** Credit V.\* 20 hours. Associate WARE and Mr. CORBETT

Fee, see above

Major and minor problems corresponding to the Class B Problems (Projets) of the Beaux-Arts Institute of Design.

**Architecture e65-66—Advanced design.** Credit V. 20 hours. Associate WARE and Mr. CORBETT

Fee, see above

Major and minor problems corresponding to the Class A Problems (Projets) of the Beaux-Arts Institute of Design.

**Architecture e67-68—Thesis.** Credit V. 4 points either Session. Associate WARE and Mr. CORBETT

Fee \$24 either Session

An important final problem in design. Instructions will be sent to those qualified.

## ASTRONOMY

**Astronomy e1—Introduction to the science.** Credit I. 2 points Winter Session. Dr. BRAININ

7:10-9 p. m., Friday. Wilde Observatory. Fee \$12

This course consists of a non-mathematical explanation of the simpler phenomena under everyday observation in the heavens. Among the topics considered are: The constellations and aids to the naked-eye recognition of the stars; the subjects of time and navigation; the earth and moon, their relation to each other and to the solar system and the universe; the sun, its spots and prominences; the planets, individually and as members of the solar system; the question of their habitability; eclipses, comets, and meteors; the stars, their motions and compositions; the nebulae and their relation to cosmic hypotheses.

Frequent use will be made of the equatorial telescope and other instruments of the observatory as well as of the Department's large collection of lantern slides.

Text-book: Jacoby's *Astronomy*.

\* Students desiring credit for this course in the School of Architecture must submit a complete set of drawings done in Extension Teaching up to the time of the application for transference of credit and bearing the attestation of the instructor in charge. Requests for such transference of credit should be made to Curator R. F. BACH, School of Architecture, or left in writing for him at the office of the Director of Extension Teaching. The difference in tuition fees must be paid.

**Astronomy e2—Introduction to the science.** Credit I. 2 points Spring Session. Dr. BRAININ

7:10-9 p. m., Friday. Wilde Observatory. Fee \$12

Astronomy e1 repeated in the Spring Session.

**Extension students who are qualified will also be admitted to the following course:**

**Astronomy 1 or 2—General astronomy.** Introductory course. 3 points either Session. Professor JACOBY

11 a. m., Tuesday and Thursday, Room 305 Schermerhorn, and fortnightly evening attendance in the Wilde Observatory, counting as a three-point course involving laboratory work. Fee \$18 either Session

Prerequisite: Mathematics A.

## BOOKKEEPING

**Bookkeeping e1—Secretarial bookkeeping.** 4 points Winter Session. Mr. C. C. HUGHES

4:30-6:10 p. m., Wednesday, and 9-10:40 a. m., Saturday, Room 511 Journalism. Fee \$24

A knowledge of bookkeeping is not required of students taking this course. The purpose is to prepare the students to keep the books of the professional man as well as to interpret the accounts of a modern business. From the study of a few simple accounts the work will proceed to a drill in double entry as applied to a trading concern. Some of the special features of this course will include the preparation of various business forms, statements, and reports; construction of family budgets and household accounts; club and society accounts; controlling accounts; lawyers accounts; the private ledger and its relation to the general ledger; the bank account and bank reconcilements.

Complete in one Session.

**Bookkeeping e2—Secretarial bookkeeping.** 4 points Spring Session. Mr. C. C. HUGHES

4:30-6:10 p. m., Wednesday, and 9-10:40 a. m., Saturday, Room 511 Journalism. Fee \$24

This course is the same as Bookkeeping e1, given in the Spring Session.

## BOTANY

**Botany e1-2—Nature and development of plants.** Lectures and laboratory Credit I, IV. 4 points each Session. Dr. DODGE and Mr. GOLDSMITH

4-6:30 p. m., Monday and Thursday. Room 502 Schermerhorn. Fee \$24 each Session

Organs, structure, and work of the plant; development of plant life through an examination of the important biologic types. This course is required of pre-medical students, to supplement Zoology e1a-2a; the two courses constitute one year of biology required by law for students intending to study medicine.

**Botany e1a-2a—General botany.** Lectures and laboratory. Credit I, IV. 2 points each Session. Dr. DODGE and Mr. GOLDSMITH

1:10 p. m., Saturday, Room 505 Schermerhorn; laboratory, 2:10-4 p. m., Room 502 Schermerhorn. Fee \$12 each Session

Equivalent to Botany e1-2 if taken for two years.

**Botany e3-4—Edible and poisonous fungi.** Credit IV. 2 points each Session. Dr. DODGE

2:10 p. m., Saturday, Room 505 Schermerhorn; 3-4 p. m., laboratory, Room 502 Schermerhorn. Fee \$12 each Session

Laboratory work on the identification of the common types with field excursions for collecting and photographing specimens.

**Botany e5-6—**Students having completed the preceding courses may continue their work by registering for this class, the hours and character of the work to be determined upon consultation with Professor HARPER. Credit I. 2 points each Session. Fee \$12 each Session

## BUSINESS

### *Undergraduate Courses*

**Business e7-8—Business organization and administration.** Credit IX. 2 points each Session. Fee \$12 each Session. Professor HAIG

Section 1—4:10-6:00 p. m., Tuesday, Room 507 Journalism

Section 2—7:40-9:30 p. m., Tuesday, Room 507 Journalism

A brief survey of the development of business enterprise. A comparison of the individual proprietorship, the partnership and the corporation. The structure and organization of corporations; where to incorporate; the charter; organization meetings; selection of officers; proxies; voting trusts; standing committees, etc. General principles of business organization and administration. Factors influencing location and construction of plants. Purchasing and receiving; stores and perpetual inventories. Problems of employment and welfare work. Production routine; special wage systems; 'scientific' management and 'efficiency' movement; marketing and sales organization; credits and collections; advertising department; traffic and shipping; office organization; graphic records, etc.

The course is designed as a general survey of modern business procedure.

**Business e13-14—Advertising display.** 2 points each Session. Mrs. HUBBART

7:40-9:30 p. m., Wednesday, Room 507 Journalism. Fee \$12 each Session

This is a practice course in advertising layouts, supplemented by lectures on the attention-value of display and arrangement as applied to advertising. It deals principally with methods of reflecting the advertising idea pictorially and adjusting it to the nature of the goods advertised and the treatment of the text-matter of the advertisement. Students are given assignments designed to enable them to link together the sales, advertising, and the merchandise value of the advertisement.

Given in conjunction with the courses in commercial art and practical and advanced advertising.

**Business e15—Practical advertising.** Credit IX. 2 points Winter Session. Mr. HUBBART

7:40-9:30 p. m., Thursday, Room 610 Journalism. Fee \$12

Primarily this course deals with the theory, technique, and practice of advertising, with the object of giving the student a definite idea of the nature of advertising as a factor in business and a fair understanding of its use and value in the promotion of sales. The course is conducted, however, as an idea class with the purpose of studying the origin of salesbuilding ideas and how they may be applied to copy designed for use in creating sales. To this end assignments are given in the formulation of campaigns; copy and ideas are analyzed to discover their proper adjustment to the selling problems incidental to the marketing of prescribed commodities. All class discussions are based on copy and ideas turned in by the student. Particular attention is devoted to the fundamental aspects of national, consumer, class, trade, and technical advertising.

Students are advised to take retail merchandizing, psychology of advertising and Business English as parallel courses.



**Business e16a—Practical advertising.** Credit IX. 2 points Spring Session.  
Mr. HUBBART

7:40-9:30 p. m., Monday, Room 507 Journalism. Fee \$12

Identical with Business e15, but offered in the Spring Session.

**Business e17—Retail merchandizing.** Credit IX. 2 points Winter Session.  
Mr. HUBBART

7:40-9:30 p. m., Tuesday, Room 603 Journalism. Fee \$12

This course embodies primarily a practical study of the basic principles of buying and selling goods at retail. A secondary phase of the work deals with the growth and development of different types of retail establishments: general stores, specialty stores, retail chains and syndicates, and the department store.

The course falls naturally into the study of store organization, operation and selling methods respectively. Under these general divisions are taken up details of the selection and training of help, departmentizing, policies, selection and sale of merchandise, costs, equipment and service.

This course is especially designed to meet the requirements of students who are fitting themselves as teachers of commercial subjects and as directors of store service. Students in Practical Advertising are advised to take this course.

**Business e18—Sales management.** Credit IX. 2 points Spring Session.  
Mr. HUBBART

7:40-9:30 p. m., Thursday, Room 610 Journalism. Fee \$12

Primarily this course deals with the more important elements of executive and operative organization in highly departmentized commercial and industrial establishments; secondary phases of the work include a practical presentation of modern methods in the training of sales and operative help with a view to increased individual and institutional efficiency and an analysis of the selling methods of typical business houses.

This course is designed for those intending to engage in practical managerial work and for teachers of business subjects.

Prerequisite: Business e18a.

**Business e18a—Salesmanship.** Credit IX. 2 points Spring Session. Mr. HUBBART

7:40-9:30 p. m., Tuesday, Room 603 Journalism. Fee \$12

Selling and the prime essentials of salesmanship are considered in this course. The student is given a grounding in the principles of selling and practice in the presentation of a selling proposition from its inception in the customer's mind throughout its development and final consummation as a sale.

The distinct forms of sales are illustrated with typical problems in selling at retail, wholesale, the marketing of specialties and problems in promotion. The student is familiarized with the essential features in the linking of sales and advertising campaigns in the creation and development of business backgrounds.

The ultimate aim of this course and of Business e15 is to fit the student to analyze market problems and to apply to them the proper principles and methods of advertising and selling.

**Business e20—Retail advertising.** Credit IX. 2 points Spring Session.  
Mr. SINSHEIMER

7:40-9:30 p. m., Wednesday, Room 512 Journalism. Fee \$12

This course deals with the nature and purpose of retail advertising as a factor in the sale of goods and the building of business and prestige for retail stores.

The work is based on the technical phases of planning and writing copy, designing retail layouts, and the merchandising of the advertisement. Class work includes lectures, practice work in copy assignments, and the study and criticism of current retail advertising. A third of the time is devoted to management of media, appropriations, and newspaper space, and the study of supplementary retail advertising—car cards, circulars, and billboards.

Prerequisites: Practical Advertising and Retail Merchandising.



**Business e23-24—First year accounting.** Credit IX. 2 points each Session. Fee \$12 each Session. Messrs. BAKER, BALTZ, BICKELL, WOOLHOUSE, and Miss MILLER

Section 1—7:40-9:30 p. m., Monday, Room 511 Journalism

Section 2—7:40-9:30 p. m., Tuesday, Room 511 Journalism

Section 3—7:40-9:30 p. m., Wednesday, Room 511 Journalism

Section 4—7:40-9:30 p. m., Thursday, Room 511 Journalism

Section 5—7:40-9:30 p. m., Friday, Room 511 Journalism

Section 6—4:30-6:10 p. m., Friday, Room 511 Journalism

This course develops the subject rapidly, devoting its time and emphasis to the foundational problems of accounting. It is built up along the lines and methods of modern accounting practice. The subject matter includes: theories of debit and credit; classification of accounts; underlying principles of the various accounting records; business papers and documents used as the basis for first entry; simple problems of the balance sheet and income statement; single entry; controlling accounts; handling sales and purchases; safeguarding the cash; consignments; and related topics. Ample practice for students is provided. It is prerequisite to all the other courses in accounting.

**Business e23a—First year accounting.** Credit IX. 2 points Winter Session. Mr. BARBER

7:40-9:30 p. m., Thursday, Room 712 Journalism. Fee \$12

Identical with Business e24, but offered in the Winter Session for the benefit of those who have had Business e23.

**Business e24a—First year accounting.** Credit IX. 2 points Spring Session. Fee \$12. Messrs. BARBER and C. C. HUGHES

Section 1—7:40-9:30 p. m., Thursday, Room 712 Journalism

Section 2—7:40-9:30 p. m., Wednesday, Room 712 Journalism

Identical with Business e23, but offered in the Spring Session for those beginning the study of accounting.

**Business e25-26—Second year accounting.** Credit IX. 2 points each Session. Fee \$12 each Session. Messrs. J. F. HUGHES and KOOPMAN

Section 1—7:40-9:30 p. m., Monday, Room 713 Journalism

Section 2—7:40-9:30 p. m., Thursday, Room 713 Journalism

A thorough study of the corporation and its related problems is the chief aim of the first half of the course. Some of the topics covered are: records and accounts peculiar to a corporation; elements of manufacturing accounts; perpetual inventory; voucher system and payroll methods; theories of the balance sheet; its make-up, form and arrangement; valuation of assets in the balance sheet; depreciation; showing of liabilities; valuation of capital stock; profits; dividends; reserves and surplus; sinking and other funds; income summary and problems connected therewith; liquidation of a corporation; consolidations and mergers; branch house accounting; fire loss adjustments; hypothecation of accounts receivable; etc.

Practice work for the Winter Session will consist of data in corporation manufacturing accounting for record in blanks and of correlated problems.

The work of the Spring Session will consist of carefully classified and graded problems, supplemented by lectures and demonstrations.

Prerequisite: Business e23-24.

**Business e25a—Second year accounting.** Credit IX. 2 points Winter Session. Mr. KOOPMAN

7:40-9:30 p. m., Tuesday, Room 713 Journalism. Fee \$12

Identical with Business e26, but offered in the Winter Session.

Prerequisite: Business e25.

**Business e26a—Second year accounting.** Credit IX. 2 points Spring Session. Mr. KOOPMAN

7:40-9:30 p. m., Tuesday, Room 713 Journalism. Fee \$12

Identical with Business e25, but offered in the Spring Session.

Prerequisite: Business e23-24.

**Business e27-28—Cost accounting.** Credit IX. 2 points each Session. Fee \$12 each Session. Messrs. HOWARD and ROHRBACH

Section 1—7:40-9:30 p. m., Wednesday, Room 713 Journalism

Section 2—7:40-9:30 p. m., Friday, Room 713 Journalism

The work of the Winter Session will consist of: Elements of costs; principles and general methods of cost finding; direct and indirect costs; direct and indirect expenses; wage systems; recording material and labor costs; compiling the cost data; control of cost records by financial books.

The work of the Spring Session will consist of: Examination of plants; devising of cost systems; estimating of cost systems; departmental cost systems; special order systems according to productive labor and machine cost plans; productive systems according to productive labor and machine cost plans.

Should be taken as a parallel course with Business e25-26.

Prerequisite: Business e23-24.

**For other courses in accounting, see pp. 34, 35**

**Business e40—Agricultural economics.** Credit IX. 2 points Spring Session. Professor O. S. MORGAN

4:10-5 p. m., Wednesday and Friday, Room 505 Schermerhorn. Fee \$12

A study of agricultural problems from the economic standpoint. The principles of production and marketing of farm products are discussed; the course includes such subjects as land conditions, values, and development; land rents; size of farms and significance; intensive and extensive methods; farm labor, wages, and profits; agricultural credit; the place of live stock in agriculture; and the costs of production; the various methods of marketing and farmers' organizations.

**Business e45-46—Corporation finance.** Credit IX. 2 points each Session. Professor H. LYON

7:40-9:30 p. m., Monday, Room 512 Journalism. Fee \$12 each Session

This course will follow the syllabus of the Investment Bankers Association.

For the Winter Session the course will present the variations of risk and income and control of corporation effects through the issuance of its securities; principles governing the issuance and proportions of classes of securities of a corporation, or the plan of capitalization, financial situations which lead to the issuance of particular forms of securities, the organization of subsidiaries, assumed bonds and guaranteed securities; leases; securities issued for mergers, combinations and consolidations; amortization of debt; the preparation of securities with relation to the market.

In the Spring Session the course will discuss the finding of funds for the capital account; financing through an appeal to the stockholders and stockholders' "rights"; work and methods of the banking houses in financing corporations and inducing capitalists to commit funds to the enterprise; making a "market," syndicate transactions, joint accounts and underwritings; management of incomes; financing of receiverships, readjustments of the capital account and reorganizations.

**Business e55—Business mathematics.** Credit IX. 3 points Winter Session. Professor GROVE

4:45-6 p. m., Tuesday and Thursday, Room 610 Journalism. Fee \$18

The aim of the course is to give to the student as thorough an understanding as may be of the methods of computation and of the procedure that he may profitably use and follow in transactions involving discounts, interest, banking, stocks, bonds, exchange, insurance, taxes,

customs, as being the methods and procedure approved in the experience of men of intelligence and insight in affairs. It is the heritage of the student to be saved the weary waste of experimentation of others in the past, and to enter upon their findings the better to attack new problems. The use of mathematical tables and calculating machines will be provided. The course is designed to be of value to clerks in banks and brokerage houses by acquainting them with the principles underlying their work. Laboratory practice is offered to develop technique.

Prerequisite: A course in commercial arithmetic or equivalent office experience or Mathematics A in College.

**Business e56—The mathematics of investment.** Credit IX. 3 points  
Spring Session. Professor GROVE

4:45–6 p. m., Tuesday and Thursday, Room 610 Journalism. Fee \$18

This course is a continuation of Business e55, by which it should be preceded. It will give more minute and serious consideration to the subjects of interest, annuities, amortization, the valuation of bonds, sinking funds, and an introduction to the theory of probability and its applications to financial problems.

**Business e61—Elementary business arithmetic.** 2 points Winter Session.  
Mr. VAN TUYL

7:40–9:30 p. m., Tuesday, Room 605 Journalism. Fee \$12

A thorough review of fundamental operations as applied to everyday business transactions, particular attention being given to simple, short, practical methods of calculation. Special topics considered are: Aliquot parts as applied to multiplication, division, percentage and interest; rapid calculations; checking results; fundamental principles of arithmetics as used in the solution of problems; graphs; percentage and its applications; bank discount.

**Business e61a—Advanced business arithmetic.** 2 points Winter Session.  
Mr. VAN TUYL

6–7:40 p. m., Tuesday, Room 605 Journalism. Fee \$12

**Business e62—Business mathematics.** 2 points Spring Session. Mr. VAN TUYL

7:40–9:30 p. m., Tuesday, Room 605 Journalism. Fee \$12

This course presupposes a working knowledge of elementary business arithmetic and will include such topics as insurance, taxes, sinking funds, stocks, bonds, exchange, United States customs and equation of accounts. Calculating tables will be introduced and used in solving problems. The work is designed to be helpful to teachers of business arithmetic in secondary schools and in private business schools; also to accountants and others in banks and brokerage houses.

**Business e73-74—Contracts.** Credit IX. 2 points each Session. Professor GIFFORD

7:40–9:30 p. m., Thursday, Room 515 Kent. Fee \$12 each Session

This course aims to furnish an exposition of the fundamental principles of the law of contracts, including parties, subject matter, the essentials of mutual assent, formal requisites, consideration, construction, discharge and consequences due to breach of contract.

Text-book: Ashley's *Cases on Contracts*.

**Business e75—Corporation law.** Credit IX. 2 points Winter Session.  
Professor WORMSER

7:40–9:30 p. m., Tuesday, Room 515 Kent. Fee \$12

This course deals with the nature and formation of private corporations; their management, including the issue and transfer of stock, the rights and liabilities of promoters, stockholders and directors; the proper method of holding corporate meetings and keeping the records thereof; the taxes required of an ordinary business corporation.

Text-book: Canfield and Wormser's *Cases on Corporations*.



**Business e76—Negotiable instruments.** Credit IX. 2 points Spring Session. Mr. CURRIER

7:40-9:30 p. m., Wednesday, Room 515 Kent. Fee \$12

The object of this course is to acquaint students with the history of negotiable paper and to give them a correct idea of the legal principles governing the rights and duties of the various parties to it. It is not intended for law students but for persons who intend to engage in business. An attempt will be made to discuss the everyday questions which confront the business man in his use of bills, notes, and checks and to teach the student how to solve them.

Text-book: Smith and Moore's *Cases on Bills and Notes*.

**Business e77-78—Life insurance.** Credit IX. 2 points each Session. Professor HUEBNER

5:30-7:20 p. m., Friday, Room 213 Hamilton. Fee \$12 each Session

Family, personal, and business uses of life insurance; a thorough analysis of term, whole life and limited payment policies, endowment insurance, income policies, annuities and group insurance; an analysis of the net and single premium, the reserve, loading, surrender values, policy loans, surplus and dividends; insurance of impaired lives; stock versus mutual life insurance; investment of life insurance funds; a thorough analysis of the law of life insurance as it affects the interpretation of the contract, insurable interest, the beneficiary, and assignment of policies.

**Business e81—Casualty insurance.** Credit IX. 2 points Winter Session. Dr. BLANCHARD

5:30-7:10 p. m., Thursday, Room 213 Hamilton. Fee \$12

Devoted principally to the development of employer's liability and to the principles and practices of workmen's compensation and its insurance; compensation insurance organizations, contracts, rates and rating, and reserves. Other leading forms of casualty insurance such as accident and health insurance, automobile insurance, steam boiler insurance, etc.

**Business e82—Fire insurance.** Credit IX. 2 points Spring Session. Dr. BLANCHARD

5:30-7:10 p. m., Thursday, Room 213 Hamilton. Fee \$12

Fundamentals of insurance; fire insurance organizations; policy contracts, forms and interpretation; fire prevention; rating; underwriters' associations; adjustments; reinsurance; government supervision. A discussion of the principles, practices, and problems of fire insurance.

**Business e85-86—Latin-American commercial law.** Credit IX. 2 points each Session. Mr. OBREGON

7:40-9:30 p. m., Thursday, Room 707 Journalism. Fee \$12 each Session

A general idea of the history of Latin-American countries as a means of understanding their legislation, and particularly, their commercial law.

First, the legal condition of merchants; the constitution of commercial companies and their different characters; the rights and obligations of stockholders, and of those who organize and administer corporations; the rights of agents and attorneys. Second, the requisites and fulfilment of contracts; negotiable instruments; foreign exchange. Third, administration of justice and judicial procedure; bankruptcy or insolvency. Fourth, the institutions and laws of commerce in relation to banks, coinage, postal service and customs duties; regulations as to imports and exports; laws applying to patents and copyrights; laws relating to public lands and to mines; the consular service.

**Business e91-92—Commercial geography.** Credit I, IV. 2 points each Session. Mr. STOCKDER

3:10-4:25 p. m., Tuesday and Friday, Room 610 Journalism. Fee \$12 each Session

This course is concerned with a study of the leading industrial and commercial activities of the great nations, with especial reference to the United States. The physical conditions which influence the production of raw materials, the development of manufacturers, the laying out of routes of trade and the location of markets are first considered, and emphasis is then placed upon the production and distribution of the materials which enter into food, clothing and shelter.



[ **Business e97—International trade.** Credit IX. 2 points Winter Session. Fee \$12. Not offered in 1918-1919 ]

General course on international foreign commerce and national resources.

[ **Business e98—Foreign salesmanship.** Credit IX. 2 points Spring Session. Fee \$12. Not offered in 1918-1919 ]

Methods of marketing in foreign lands. Methods of successful American and foreign commercial houses analyzed. Cooperation in foreign trade.

### *Graduate Courses*

These courses are open to qualified students without restriction.

**Business e107-108—Advanced business organization and administration.** Credit II, IX. 3 points each Session. Professor HAIG

4:10-6 p. m., Thursday, Room 503 Journalism. Fee \$18 each Session

This course is designed to afford a more detailed examination of the problems of business organization and administration than is possible in the elementary course (Business 7-8). There are occasional lectures, but most of the time is devoted to discussion of the required reading and to a consideration of reports on personal investigations of the students in the business houses of the city and in the literature of the field. Students who have not completed Business 7-8 or e7-8 may enter the course only with the consent of the instructor.

**Business e110—Problems of personnel management.** Credit II, IX. 3 points Spring Session. Mr. TEAD

7:30-9:20 p. m., Friday, Room 610 Journalism. Fee \$18

This course is especially designed for those who are training for or engaged in the work of dealing with employees in stores and factories. It will deal primarily with the problems that center about the maintenance of an efficient and willing working force.

**Business e112—The marketing of manufactured products.** Credit II, IX. 2 points Spring Session. Professor HAIG

7:40-9:30 p. m., Tuesday, Room 610 Journalism. Fee \$12

A treatment of the problems involved in the distribution of manufactured products, including a consideration of such topics as market analysis, marketing organizations and methods, the function of advertising, private brands, price problems, price maintenance, etc.

**Business e117-118—Psychology of advertising and selling.** Credit II, IX. 3 points each Session. Professor HOLLINGWORTH

7:40-9:20 p. m., Monday, Room 407 Schermerhorn. Fee \$18 each Session

Application of psychological principles and experimental methods to the problems of appeal and response in advertising and selling. Analysis and evaluation of the methods and devices of publicity on the basis of (1) the known facts of human nature; (2) detailed examination of actual advertising campaigns and the analysis of their results; (3) the application of laboratory and statistical technique; and (4) comparative study of old and new methods of marketing. The material for the entire course is based upon the findings of experimental investigation and the results of actual sales campaigns. Illustrated by lantern slides and current advertising material.

**Business e129-130—Third year accounting.** Credit II, IX. 2 points each Session. Mr. KESTER

7:40-9:30 p. m., Friday, Room 712 Journalism. Fee \$12 each Session

A course in advanced problems. The early part of the work will consist of specialized problems illustrating accounts and methods peculiar to various classes of enterprises. The later part will comprise selected C. P. A. and miscellaneous problems. The work of the classroom will be conducted by means of lectures, demonstrations, and reports.

A charge will be made for the problems.

Prerequisite: Business e25-26.

**Business e131-132—Auditing, theory and practice.** Credit II, IX. 2 points each Session. Professor MONTGOMERY and Mr. BAKER

7:40-9:30 p. m., Thursday, Room 507 Journalism. Fee \$12 each Session

This course is for advanced students only. A text-book on auditing will be used as a basis for home assignments, and students will be expected to spend at least two hours each week preparing for the quiz which forms part of the classroom work. Students will be taught to prepare working audit programs for various classes of business. The principal object of this course will be to train and develop the analytical faculties of the students. Methods of accounting used by unsuccessful concerns will be explained and the causes of failure analyzed. Methods followed by concerns which need capital involving hypothecation of assets, and manipulation of accounts with allied and subsidiary concerns will be discussed.

Prerequisite: Business e25-26.

Students can apply the essential underlying principles of auditing as developed in this course to practical work by taking Business e133-134 (laboratory) as a parallel course.

**Business e133-134—Accounting laboratory.** Credit II, IX. 2 points each Session. Fee \$12 each Session. Mr. BYRNES

Section 1—7:20-9:30 p. m., Monday, Rooms 503 and 505 Journalism

Section 2—7:20-9:30 p. m., Wednesday, Rooms 503 and 505 Journalism

This course consists of laboratory work exclusively. The material used will be the account books of various firms and corporations which have gone into bankruptcy or liquidation. These records present many interesting and complicated problems. Many sets of books are available offering a wide scope for analysis and investigation. Practical questions and problems compiled from these old records will be given to the student to answer and solve by an actual examination of the books.

These will give the student a practical working test under conditions which very closely correspond to those to be met in actual practice, and the course will be particularly advantageous to students who have had only a limited opportunity to examine books used by various classes of enterprises.

The laboratory also contains many blank forms, designed for different classes of enterprises.

Prerequisite: Business e25-26, and the student should be pursuing Business e131-132 as a parallel course.

**Business e139—Income tax procedure.** Credit II, IX. 2 points Winter Session. Professor HAIG

7:40-9:30 p. m., Tuesday, Room 610 Journalism. Fee \$12

A consideration of the technical problems arising from the imposition of the federal taxes on incomes and excess profits. The problems are approached from the point of view of the tax-payer who desires to determine the exact application of the law to the interests he represents.

**Business e147-148—Investments.** Credit II, IX. 3 points each Session. Professor H. LYON

7:40-9:30 p. m., Tuesday, Room 512 Journalism. Fee \$18 each Session

Though this course will follow in general the outline of Business 147-148, it will not demand Business 45-46 as a prerequisite. The necessary corporation finance topics will be taken up in the course itself, and the extent to which the investment topics are considered will be modified. For those who have had Business 45-46 it will count only two points.

**Business e161-162—The mathematics of statistics.** Credit II, IX. 3 points each Session. Professor GROVE

4:45-6 p. m., Monday and Wednesday, Room 610 Journalism. Fee \$18 each Session

The aim of the course is to give some idea of the range of applicability of the statistical method, to impress clearly the fundamental assumptions underlying the several theories and methods, and thus to prepare the student to apply intelligently these theories and methods.

The course deals with such algebraic topics as are necessary to the study of the elements of the theories of probability, errors, variables, sampling, the method of least squares, the calculus of finite differences and interpolation. This implies the consideration amongst others, of the topics, frequency-distribution, averages, measures of dispersion and correlation.

**Business e167—Railway traffic and rates.** Credit II, IX. 3 points Winter Session. Professor VAN METRE

5:20-7 p. m., Wednesday, Room 213 Hamilton. Fee \$18

Organization and service of the traffic department; systems of rates and fares; accounting of freight and passenger train revenues; traffic problems, such as car service, demurrage, and claims.

**Business e168a—Railway traffic and rates.** Credit II, IX. 3 points Spring Session. Professor VAN METRE

5:20-7 p. m., Wednesday, Room 213 Hamilton. Fee \$18

Business e167 repeated in Spring Session for new students.

**Business e171-172—The principles and practices of factory management.** Credit II, IX. 3 points each Session. Professor RAUTENSTRAUCH

7-9 p. m., Monday, Room 605 Journalism. Fee \$18 each Session

This course is adapted to men in the industries who are in charge of departments of factories. Other men qualified by contact with production problems are also admitted. Attendants to these lectures will be instructed in the principles underlying the successful management of factories and the practices of representative industries in the conduct of planning departments, tool rooms, drafting rooms, store rooms, purchasing and sales departments. The problem of wage payments, costs of production and methods of cost finding and estimating are dealt with.

Attention is given to the establishment of lines of control through line organization and functional organization and to the graphic representation of the prime variable of the business upon which control may be founded. A couple of visits may be made to the factories operating under the lecturer's general supervision.

**[ Business e189—Ports and terminal facilities.** Credit II, IX. 3 points Winter Session. Fee \$18. Not offered in 1918-1919 ]

A detailed study of marine terminal problems; of the coordination of land, river and ocean carriers. A study of the functions and physical aspects of the leading ports of the world. Several hundred illustrations (stereopticon).

**[ Business e190—Theory and practice of ocean transportation.** Credit II, IX. 3 points Spring Session. Fee \$18. Not given in 1918-1919 ]

The growth of ships and ship lines. A special study of the various types of ocean carriers, the cost of building and operating them and problems of ocean rate making. The routine of ocean shipping, shipping papers and ship papers, marine insurance, commissioners, brokers and agents. The American mercantile marine, past, present and future.

**History e177—Latin America: people; government; resources.** Credit II, IX. For those taking both hours, 3 points Winter Session. Professor SHEPHERD

Lecture, 7:30-8:20 p. m., conference, 8:20-9:10 p. m., Monday, Room 615 Kent. Fee \$18

This course, followed by History e178, aims to supply the knowledge and cultivate the attitude of mind which may enable Americans to understand Latin-Americans, appreciate their circumstances, work with them along the lines of material and intellectual progress, and contribute in general to the promotion of inter-American friendship and commerce.



**History e178—Latin America; industry; transportation; commerce.** Credit II, IX. For those taking both hours, 3 points Spring Session. Professor SHEPHERD

Lecture, 7:30–8:20 p. m., conference, 8:20–9:10 p. m., Monday, Room 615 Kent. Fee \$18

See description of History e177.

### *Economics*

**Economics e1–2—Principles of economics.** Credit I, IV. 3 points each Session. Fee \$18 each Session. Professors R. C. MCCREA and VAN METRE, and Dr. BLANCHARD

Section 1—7:30–10 p. m., Wednesday, Room 605 Journalism

Section 2—7:30–10 p. m., Thursday, Room 605 Journalism

Section 3—4:30–5:45 p. m., Wednesday and Friday, Room 507 Journalism

Economics is the study of business activity from the standpoint of public welfare. This course undertakes, first, to explain the present-day organization and operation of industry, and, second, to consider how far the present situation needs correction from the standpoint of efficiency in production and justice in distribution. The year's work is concerned with an historical and analytical study of the principles and with practical economic problems, such as the tariff, money and banking, monopolies, the labor problem, etc.

The course presupposes some knowledge of European and American history.

**Economics e1a—Principles of economics.** Credit I, IV. 3 points Winter Session. Mr. L. R. ROBINSON

7–9:30 p. m., Wednesday, Room 603 Journalism. Fee \$18

The purpose of this course is to acquaint the student with the fundamental facts underlying national economic problems. Each problem will be treated in its historical perspective. Starting with a brief description of modern economic organization, the course will consider the class struggle and the significance of socialism. Among the topics are the principles of money and banking, anti-trust legislation; railways, their development, charges, and regulation; international trade; wages and standards of life of American wage-earners. Present-day tendencies in political and economic development, such as the conservation of national resources and the regulation of public utilities will be analyzed.

Corresponding to Economics e2 but given in the Winter Session.

**Economics e2a—Principles of economics.** Credit I, IV. 3 points Spring Session. Fee \$18. Mr. L. R. ROBINSON

Section 1—4:30–5:45 p. m., Tuesday and Friday, Room 605 Journalism

Section 2—7–9:30 p. m., Wednesday, Room 603 Journalism

Economics e1 repeated in the Spring Session for new students. A beginning class.

**Economics e160—Women in gainful occupations.** Credit II. 3 points Spring Session. Miss HUTCHINSON

7:30–9:30 p. m., Monday, Room 707 Journalism. Fee \$18

This course is intended for those who wish to make a study of the economic position of women in commercial and professional pursuits. Lectures and discussions will be combined with approximately six hours of field work under the direction of the Information Department of the Intercollegiate Bureau of Occupations.

The class is limited to twelve and open only to college graduates.



**Extension students who are qualified will also be admitted to the following courses:**

**Economics 101—Science of finance.** 3 points Winter Session. Professor SELIGMAN

1:10 p. m., Monday and Wednesday, Room 515 Kent. Fee \$18

General introduction and history of science of finance. Different kinds of public revenues, including public domain and public property, public works and industrial undertakings, fees and special assessments. General theories and principles of taxation, incidence of taxation, and newer social theories of taxation.

**Economics 102—Science of finance.** 3 points Spring Session. Professor SELIGMAN

1:10 p. m., Monday and Wednesday, Room 515 Kent. Fee \$18

Application of general principles to consideration of actual systems of taxation. Practical American problems of federal, state and local taxation. Classes of public expenditure and fiscal principles which govern them. Public debt, methods of borrowing, redemption, etc. Fiscal organization of state. Budget, national, state and local.

**Economics 107—Fiscal and industrial history of the United States.** 3 points Winter Session. Professor SELIGMAN

3:10 p. m., Monday and Wednesday, Room 515 Kent. Fee \$18

A survey of national legislation on currency, finance, and taxation, including the tariff, together with its relations to the general state of industry and commerce.

(Identical with History 163)

**Economics 108—Railroad problems; economic, social and legal.** 3 points Spring Session. Professor SELIGMAN

3:10 p. m., Monday and Wednesday, Room 515 Kent. Fee \$18

This course treats of railroads in the four-fold aspect of their relation to investors, employees, the public, and the state, respectively. Particular attention is paid to the theory and practice of railroad rates and to the methods of regulation in the United States.

## CHEMISTRY

**Chemistry eA1—General chemistry.** Elementary course for students beginning the study of chemistry. 2 lectures, 1 recitation and 2 hours' laboratory practice a week. Credit I, IV. 4 points Winter Session. Professor NEISH and assistants.

7-9:50 p. m., Tuesday and 7-8:50 p. m., Friday. Fee \$24

Lecture, 7-7:50 p. m., Tuesday and Friday, Room 309 Havemeyer

Recitation, 8-8:50 p. m., Friday, Rooms 307, 511 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday, Room 615 Havemeyer

This course is the duplicate of the day course A1. It is prerequisite to the other courses in chemistry given in Extension Teaching and to the first-year chemistry in the combined six-year College and Engineering course.

Deposit for breakage, \$20.

Text-books: Smith's *Elementary Chemistry and Laboratory Outline* (interleaved).

**Chemistry eA2—General chemistry.** Course eA1 repeated in the Spring Session for students desiring to begin in February. Credit I, IV. 4 points Spring Session. Mr. HAESELER and assistants

7-9:50 p. m., Tuesday, and 7-8:50 p. m., Friday. Fees as for Chemistry eA1 above. Fee \$24

Lecture, 7-7:50 p. m., Tuesday and Friday, Room 311 Havemeyer

Recitation, 8-8:50 p. m., Friday, Rooms 307, 309 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday, Room 615 Havemeyer

Deposit for breakage, \$20.

**Chemistry eA3-A4—General chemistry.** Elementary course for students beginning the study of chemistry. Saturday afternoons throughout the year. Credit I, IV. 2 points each Session. Mr. A. H. WRIGHT

2-4 p. m., Saturday. Fee \$12 each Session

Lecture 2:30-3:30 p. m.; recitation, 2-2:30 p. m., Room 311 Havemeyer. Alternate Saturdays

Laboratory 2-4 p. m., Alternate Saturdays, Room 615 Havemeyer

Identical with eA1 or eA2.

Deposit for breakage, \$20 for the year.

**Chemistry eX1-X2—Technical analytical chemistry.** 3½ points each Session. Dr. H. A. FALES

7-9:50 p. m., Tuesday and Friday. Fee \$21 each Session

Lecture, 7-7:50 p. m., Tuesday, Room 504 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday; 7-9:50 p. m., Friday, Room 504 Havemeyer

A course in analytical chemistry for persons actively engaged in analytical laboratories.

The scope of the work will embrace such topics as: steels, alloy-steels, alloys, minerals, ores, etc., and any other topics of special interest to the student. The course will include a discussion of precision of methods, investigation of new methods, and a comparison of methods used by the different leading laboratories in the country.

Deposit for breakage, \$30 first term; \$25 second term.

Prerequisite: The student must be actively engaged in an analytical laboratory and have sufficient acquaintance with analytical methods to be able to proceed on his own initiative. No academic credit will be given for the course.

**Chemistry e3-4—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week in each Session. Credit I, IV, V. 5 points each Session. Identical in content and credit with Chemistry e6-7. Mr. HAESELER and assistants

7-9:50 p. m., Tuesday, Wednesday and Friday. Fee \$30 each Session

Lecture, 9-9:50 p. m., Tuesday, Wednesday and Friday, Room 311 Havemeyer

Laboratory, 7-8:50 p. m., Tuesday, Wednesday and Friday, Room 615 Havemeyer

Deposit for breakage, \$25 first term; \$20 second term.

Prerequisite: Chemistry eA1, eA2, or the equivalent, and elementary physics.

**Chemistry e6—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Spring Session. Professor NEISH and assistants

7-9:50 p. m., Tuesday, Wednesday and Friday. Fee \$30

Lecture, 7-7:50 p. m., Tuesday, Wednesday and Friday, Room 309 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday, Wednesday and Friday, Room 615 Havemeyer

This course, which presupposes a knowledge of general chemistry (eA1) continues the study of general chemistry, with particular reference to giving a greater knowledge of descriptive chemistry and a more advanced and systematic discussion of general principles and their applications. This course followed by Chemistry e7 aims thus to prepare the student for the courses

in organic chemistry or in qualitative analysis. It is equivalent to Chemistry 6—required of all first-year students in the combined six-year College and Engineering course, or to Chemistry 3-.

Deposit for breakage, \$25.

Text-books: Smith's *Introduction to Inorganic Chemistry* and *Experimental Inorganic Chemistry*.

Prerequisite: Chemistry eA1 or eA2 or the equivalent.

NOTE. Chemistry eA1 followed by Courses e6-7 or e3-4, e11, and e45-46 are accepted for admission to the College of Physicians and Surgeons.

**Chemistry e7—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Winter Session. Mr. HAESELER and assistant

7-9:50 p. m., Tuesday, Wednesday and Friday. Fee \$30

Lecture, 7-7:50 p. m., Tuesday, Wednesday and Friday, Room 311 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday, Wednesday and Friday, Room 615 Havemeyer

This course is a continuation of Chemistry e6. It is equivalent to Chemistry -7 required of all second-year students in the combined six-year College and Engineering course, or to Chemistry -4.

Deposit for breakage, \$20.

Prerequisite: Chemistry e6 or e3 or the equivalent.

**Chemistry e11—Qualitative analysis.** 2 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Winter Session. Miss HOKE  
7-9:50 p. m., Tuesday and Wednesday; and 7-8:50 p. m., Friday. Fee \$30  
Lecture, 7-7:50 p. m., Tuesday and Friday, Room 307 Havemeyer  
Laboratory, 8-9:50 p. m., Tuesday; 7-9:50 p. m., Wednesday; and 8-8:50 p. m., Friday, Room 615 Havemeyer

A systematic course in the theory and practice of inorganic qualitative analysis based upon the principles of modern chemistry. It is equivalent to Chemistry 14—required of all second-year students in the combined six-year College and Engineering course, or to Chemistry 11-.

Deposit for breakage, \$25.

Text-book: Steiglitz' *Qualitative Analysis, Pt. I.*

Prerequisite: Chemistry e6-7, 6-7, e3-4 or 3-4.

NOTE. Students who have previously completed the greater part of this course may, with the consent of the Director, register for the remainder, counting it 1 to 3 points.

**Chemistry e12—Qualitative analysis.** 1 hour classroom and 6 hours' laboratory work a week. Credit I, IV, V. 4 points Spring Session. Miss HOKE  
7-9:50 p. m., Tuesday; 7-8:50 p. m., Wednesday and Friday. Fee \$24  
Lecture, 7-7:50 p. m., Wednesday, Room 307 Havemeyer  
Laboratory, 7-9:50 p. m., Tuesday; 8-8:50 p. m., Wednesday; and 7-8:50 p. m., Friday, Room 615 Havemeyer

This course is a continuation of Chemistry e11. It is equivalent to Chemistry -15 required of all third-year students in the combined six-year College and Engineering course, or to Chemistry -12.

Deposit \$20.

Text-book: Steiglitz' *Qualitative Analysis, Pt. I.*

Prerequisite: Chemistry e14, 14- or -12.

NOTE. Students who have previously completed the greater part of this course may, with the consent of the Director, register for the remainder, counting it 1 to 3 points.



**Chemistry e14—Qualitative analysis.** 2 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Spring Session. Miss HOKE 7-9:50 p. m., Tuesday and Wednesday and 7-8:50 p. m., Friday. Fee \$30  
Lecture, 7-7:50 p. m., Tuesday and Friday, Room 307 Havemeyer  
Laboratory, 8-9:50 p. m., Tuesday; 7-9:50 p. m., Wednesday; and 8-8:50 p. m., Friday, Room 602 Havemeyer

Identical with Chemistry e11, but given in the Spring Session. Should be followed by Chemistry e15.

Prerequisite: Chemistry e6-7, 6-7, e3-4 or 3-4.

Deposit for breakage, \$25.

**Chemistry e15—Qualitative analysis.** 1 hour classroom and 6 hours' laboratory work a week. Credit I, IV, V. 4 points Winter Session. Miss HOKE 7-9:50 p. m., Tuesday; 7-8:50 p. m., Wednesday and Friday. Fee \$24  
Lecture, 7-8:50 p. m., Wednesday, Room 307 Havemeyer  
Laboratory, 7-9:50 p. m., Tuesday; 8-8:50 p. m., Wednesday; and 7-8:50 p. m., Friday, Room 602 Havemeyer

Identical with Chemistry e12, but given in the Winter Session. Should be followed by Chemistry e72.

Prerequisite: Chemistry e14 or e11.

Deposit for breakage, \$20.

**Chemistry e45-46—Organic chemistry.** Short course. 1½ hours' class-room and 3 hours' laboratory work a week in each Session. Credit I, IV. 3 points each Session. No credit for Chemistry e45 or e46 separately. Dr. FISHER and assistant 7-9:15 p. m., Tuesday and Friday. Fee \$18 each Session  
Lecture, 7-7:40 p. m., Tuesday and Friday, Room 413 Havemeyer  
Laboratory, 7:40-9:15 p. m., Tuesday and Friday, Room 602 Havemeyer

A brief survey of the more important classes of organic compounds.

Deposit for breakage, \$30 each Session.

Prerequisites: Chemistry e3-4, e6-7, or the equivalent, and elementary physics. Chemistry e11 or e14 is recommended also.

Equivalent to Chemistry 46.

## COMPARATIVE LITERATURE

**Comparative literature e5-6—Greek and Latin classics in English translation.** Lectures, assigned readings, reports and discussions. Credit I, IV. 2 points each Session. Professor REILEY and Mrs. ENDICOTT

3:10-4:25 p. m., Monday, Room 610 Journalism. Fee \$12 each Session

The course will be devoted to the study and interpretation through English translation of the major works of Greek and Latin literature.

**Comparative literature e7-8—Modern European literature.** Lectures, readings and discussions. 2 points each Session. Dr. BREWSTER

4:30-5:45 p. m., Wednesday, Room 707 Journalism. Fee \$12 each Session

The course will deal with contemporary European literature. During the Winter Session the work will center upon Russian literature, considering in some detail the attitude toward life and art of the leading Russian novelists and short-story writers, Gogol, Tolstoy, Dostoevsky, Turgenev, Chekhov, and others. Lectures on Scandinavian and German literature, especially the drama, will complete the work of the Winter Session. The Spring Session will include the study of recent English, French, and Italian literature. Readings will be assigned, and if possible, some class discussions held.



**Comparative literature e10—Modern Russian literature.** Lectures, readings and discussions. 2 points Spring Session. Dr. BREWSTER

3:10-4:25 p. m., Wednesday, Room 707 Journalism

A study of contemporary Russian novelists and fiction writers. The works of Gogol, Tolstoy Dostoevsky, Turgenev, Chekhov, and others will be discussed.

**Comparative literature e11-12—Modern poetry.** 2 points each Session. Miss HULL

3:10-4:25 p. m., Thursday, Room 609 Journalism. Fee \$12 each Session

This course deals with modern poetry of Europe and America. It includes a study of the development of present tendencies in poetic conceptions with some analysis of the social background of which the poetry is an expression, and a study of modern poetic forms. The course is conducted by means of assigned readings, lectures, and class discussions.

### DRAMATIC METHOD IN TEACHING

**Dramatic method e1—The dramatic method in teaching.** 2 points. Mrs. ALICE MINNIE HERTS HENIGER

10-12 a. m., Saturday, Room 411 Kent. Fee \$12

(This class begins Saturday, October 26, 1918, and ends Saturday, February 15, 1919.)

The following special lecturers will take part in conducting this course: JOHN DEWEY, G. STANLEY HALL, GEORGE PIERCE BAKER, MARY SHAW and JACOB HENIGER.

The Board of Examiners of the Department of Education of the City of New York will accept this as a satisfactory professional course towards meeting the conditions of eligibility for license as assistant teacher in day high schools or toward meeting the conditions of exemption from parts of the examination for license for promotion or for license as assistant to principal.

This course includes theory and technique of the dramatic instinct in education. In addition, the course is designed for students who desire to write and to rehearse plays. Original scenarios are developed under the guidance of Professor BAKER, and all scenarios are criticized by him. When the best scenario is selected, the play is fully written by the student. This play is then rehearsed with class students themselves as players; thus practical demonstration is afforded in educational methods of rehearsing plays, either for schools, for settlements or for theaters.

### DRAWING

**Drawing eW1—Freehand drawing.** 2 points Winter Session. Mr. BEANS  
1:30-5:30 p. m., Saturday, Room 406 Engineering. Fee \$12

Will consist of practice in the elements of freehand perspective, and in drawing from casts or machine parts in outline, and in light and shade.

The completion of this course will be accepted as satisfying the entrance requirement in drawing.

**Drawing eW2—Freehand drawing.** 2 points Spring Session. Mr. BEANS  
1:30-5:30 p. m., Saturday, Room 406 Engineering. Fee \$12

Drawing eW1 repeated in the Spring Session.

### ECONOMICS

See Business, pp. 37, 38

### EDUCATIONAL DRAMATICS

**Educational dramatics eY1—The educational player method:** theory, demonstration and practice. 2 points. Mrs. EMMA SHERIDAN FRY

4:10-5:25 p. m., Tuesday and Thursday, Room 707 Journalism. Fee \$12

This course deals with expression as developed by scientific use of dramatic instinct. Its object is to induce expression through educational cooperation with dramatic instinct. This requires a knowledge of the principles underlying spontaneous expression and the laws whereby dramatic instinct may be regulated to educational purpose.

The Board of Examiners of the Department of Education of the City of New York has agreed to accept this as a satisfactory professional course toward meeting the conditions of exemption from parts of the examination for promotion license in elementary schools and for license as assistant to principal in elementary schools.

This course begins October 22, 1918 and ends April 6, 1919.

## ENGINEERING

### *Civil Engineering*

NOTE. With the exception of Civil engineering e1-2 these courses are intended solely for men already engaged in practical work. They do not correspond to day courses and no university credit is allowed for them. Students should note the prerequisites and are urged to confer with the instructor when in doubt as to the requirements. In connection with the courses in surveying attention is called to the complete practical courses given during the summer at Camp Columbia, Morris, Conn. These courses are open to properly qualified students who have fulfilled the necessary prerequisites. For further information address the Secretary, Columbia University, New York.

**Civil engineering e1-2—Theory of plane surveying.** Equivalent to Course CE2 advised for all students in the college preparatory course preliminary to the graduate courses in civil, mining, metallurgical and sanitary engineering. Credit I, V. 2 points each Session. Mr. KREFELD

7:30-9:10 p. m., Wednesday, Room 306 Engineering. Fee \$12 each Session

Winter Session—General principle of surveying and surveying instruments. Units and measurements. Errors and limits of precision. Tapes and measurement of distances. The vernier and level bubble. The wye and dumpy levels, theory of leveling, and rods. The compass, magnetic declination and variation, and local attraction. The engineer's transit, measurement of angles, azimuth and traversing. Latitude and departure, error of closure.

Spring Session—Surveys and computations; Land surveying, including farm, city and public land surveys, computation of coordinates and areas, parting off land, description, and relocation. Topographic surveying, transit and stadia method, theory and reduction of stadia measurements, the plane table and government work. Hydrographic, mine and construction surveys.

Prerequisite: Plane trigonometry (see Structural mechanics eXI-X2) or equivalent; also Winter Session prerequisite for Spring Session.

Text-book: Raymond's *Plane Surveying*.

**Civil engineering e2a—Field problems in plane surveying.** 1½ points Spring Session. A short course in field work arranged as a supplement to Course e1-2. Mr. KREFELD

1:30-5, ten Saturday afternoons, and one evening, beginning March 10, Room 306 Engineering. Fee \$9

**Civil engineering eY1-Y2—Plain and reinforced concrete construction.** 2½ points each Session. Professor FINCH

7:30-9:10 p. m., Thursday, Room 306 Engineering. Fee \$15 each Session

Winter Session—Advantages, general definitions. Cement, manufacture, specifications, testing. The aggregate, proportions and strength of concrete. Mixing, depositing, forms. Flexure and design of plain beams. Reinforced beams. Rectangular and 'T' beams in bending. Shear and diagonal tension. Slabs. Columns.

Spring Session—Theory, design and construction. Bearing power of soils, earth and water pressure and loads. Gravity and cantilever retaining walls. Counterfoot reservoir wall. Slab and buttress dam. Design of forms for same. Design of pipes and standpipe. Highway slab and girder bridges. Loft building, including foundations and typical beams and columns.

No text-book will be used for this course, but students will be furnished with pamphlets, notes and tables. The Spring Session will be largely given over to actual design. The instructor will be present on evenings set for this work, from 7-10, in the drafting room, Room 404 Engineering. As a reference book on the work of the Winter Session, Hool's *Reinforced Concrete Construction*, Vol. I, and as a general reference, Taylor and Thompson, *Concrete, Plain and Reinforced*, are recommended.

Prerequisites: Structural mechanics eZ1-Z2 and Mechanical drafting e1-2 or equivalent; also Winter Session prerequisite to Spring Session.

**Civil engineering e3-4—Foundations and masonry construction.** 2 points each Session. Professor FINCH

7:30-9:10 p. m., Monday, Room 306 Engineering. Fee \$12 each Session

*Materials and Foundations*—Materials, construction and specifications, lime, cement, mortar, building stones, brick, and concrete. General principles of foundations. Base pressure. Safe pressures, borings and tests. Pile foundations. Spread foundations. Excavations for foundations, sheet piles, coffer dams and caissons.

*Designs and Construction*—Water and earth pressure. Gravity dams and retaining walls. Abutments and piers. Culverts and Voussoir arches. Chimneys.

The course will consist of lectures and problems. Students will be required to work out and submit a number of practical examples.

Prerequisites: Structural mechanics eZ1-Z2 and Mechanical drafting e1-2 or equivalent.

Reference books—Jacoby and Davis: *Foundations of Bridges and Buildings*, and Baker's *Masonry Construction*.

**Civil engineering e5-6—Inspection and testing of engineering materials.** 3 points each Session. Mr. KREFELD

7-10 p. m., Tuesday, Room 306 Engineering. Fee \$18 each Session

Lectures and work in the testing laboratory covering the manufacture, inspection and testing of the materials of engineering, including: Limes, cements, mortars and concrete Terra cotta and fireproof blocks. Timber. Cast iron and steel. The construction and use of testing machines and apparatus, the technic of testing and standard tests. Fee includes cost of test specimens used by students.

Prerequisites: Structural Mechanics eX1-X2 and eX3-X4 or equivalent. Students are urged to take also Structural Mechanics eZ1, eZ2 if they have not already had this work or equivalent.

**Civil engineering e257a—Advanced course in reinforced concrete bridge construction.** Credit III, V. 4 points Winter Session. Mr. BEYER

15 weeks, 2-4 p. m., Saturday. Room 306 Engineering. Fee \$24

Conferences, reading and design work.

Prerequisite: Civil engineering eY1-Y2, Plain and reinforced concrete construction and Civil engineering e3-4, Foundations and masonry construction.

### *Electrical Engineering*

**Electrical engineering e1—Elements of electrical engineering.** Lectures. 3 points Winter Session. Mr. F. R. KELLER

7:30-9:10 p. m., Tuesday and Friday, Room 302 Engineering. Fee \$18

Designed to give the student a general knowledge of the principles of electricity and magnetism and their applications in engineering practice.

Covers magnetism, electromagnetism, the application of Ohm's law to series and parallel circuits, power measurements, practical applications of Kirchhoff's laws, inductance, etc.

Prerequisites: Algebra, elementary chemistry and physics. Students should consult the instructor as to these prerequisites.



**Electrical engineering e2—Principles of direct current machinery.**

Lectures and laboratory. 3 points Spring Session. Mr. F. R. KELLER

7:30–9:10 p. m., Tuesday and Friday. Room 302 Engineering. Fee \$18

Designed to give the student a knowledge of the construction and characteristics of direct-current generators and motors.

Covers the theory of generators and motors. Laboratory work consists of experimental work with shunt and compound generators and shunt, series and compound motors.

Prerequisite: Electrical engineering e1.

NOTE. A deposit of \$10 to cover possible breakage is required of students taking Electrical engineering e2.

**Electrical engineering e3—Elements of alternating currents. Lectures.**

3 points Winter Session. Professor SLICHTER

7:30–9:10 p. m., Monday and Thursday, Room 302 Engineering. Fee \$18

Designed to give the student a general knowledge of the principles of alternating currents.

Covers voltage and current relations in series and parallel circuits, power and power factor, inductive and capacity reactance, single and polyphase alternating current generators and armature windings.

Prerequisites: Electrical engineering e1 and e2 or equivalent. Students not having credit for e1 and e2 should consult with the instructor as to these prerequisites.

**Electrical engineering e4—Principles of alternating current machinery.**

Lectures and laboratory. 3 points Spring Session. Professor SLICHTER

7:30–9:10 p. m., Monday and Thursday, Room 302 Engineering. Fee \$18

Designed to give the student a general knowledge of the construction and characteristics of alternating current machinery.

Considers the theory and operation of the principal types of alternating current machinery. Laboratory work consists of some experimental work with the alternator, transformer, induction and synchronous motors, rotary converter and the parallel operation of alternators.

Prerequisite: Electrical engineering e3.

NOTE. A deposit of \$10 to cover possible breakage is required of students taking Electrical engineering e4.

**Electrical engineering e5–6—Wireless telegraphy and telephony. 2**

points each Session. Professor MORECROFT

7:30–9:20 p. m., Wednesday, Room 209 Philosophy. Fee \$12 each Session

This course will embrace the theory and practice of radio communication. The lecture periods will be supplemented by laboratory demonstrations. No instruction or practice in operating will be given.

The course will cover the theory of oscillations in single and coupled circuits, decrement determinations, characteristics of long wave conductors, characteristics of the audio and radio frequency circuits of modern sending apparatus; continuous wave generation; characteristics of receiving circuits and detectors, with especial emphasis on the vacuum tube detector and oscillator.

Prerequisites: Students wishing to enroll for this course must have had a good training in mathematics, continuous current and alternating current circuits and machines. Enrolment only after personal interview with instructor in charge of course.

**For courses in cable telegraphy, see special circular**

*Mechanical Drafting*

**Drafting e1–2—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points each Session. Professor HARRINGTON and assistant

7:20–10 p. m., Tuesday and Friday, Room 406 Engineering. Fee \$12 each Session

\*Students will be required to furnish their own drafting instruments and materials,

This course is the equivalent of Drafting 1-2 given to college students looking forward to the new advanced course in engineering.

It should, if possible, be taken in conjunction with Drafting e3-4.

The topics covered will be: the use of instruments; geometrical drafting; lettering; orthographic projection; topographical drafting; elementary working drawings.

**Drafting e1a—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points Winter Session. Professor HARRINGTON and assistant

7:20-10 p. m., Tuesday and Friday, Room 406 Engineering. Fee \$12

Identical with Drafting e2, but given in the Winter Session.

For description see Drafting e1-2 above.

**Drafting e2a—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points Spring Session. Professor HARRINGTON and assistant

7:20-10 p. m., Tuesday and Friday, Room 406 Engineering. Fee \$12

Drafting e1 repeated in the Spring Session for students entering in February.

For description see Drafting e1-2 above.

**Drafting e3-4—Descriptive geometry.** 2 hours' lectures per week. Credit I, V. 2 points each Session. Professor HARRINGTON

6:30-7:20 p. m., Tuesday and Friday, Room 307 Engineering. Fee \$12 each Session

This course will cover elementary problems relating to the point, right line, and plane; generation and classification of lines and surfaces; tangent planes to surfaces of single and double curvature; intersection of surfaces by planes; development of single curved surfaces; intersection of single curved surfaces. If possible, this course should be taken in conjunction with Drafting e1-2.

**Drafting e6—Graphics.\*** 3 hours' drafting-room work per week. 1 point Spring Session. Professor HARRINGTON

7:20-10 p. m., Tuesday or Friday, Room 406 Engineering. Fee \$6

This course treats of the elements of shades and shadows, perspective, and stonecutting. The solution of problems in the shades and shadows of lines, planes, and groups of solids, including the niche and torus, gives a fair working knowledge of this subject, while a sufficient number of plates are given in perspective and stone cutting to illustrate in detail the principles involved.

Prerequisites: Elements of mechanical drafting and descriptive geometry.

**Drafting e7—Engineering drafting.\*** 3 hours' drafting-room work per week. 1 point Winter Session. Professor HARRINGTON

7:20-10 p. m., Tuesday or Friday, Room 406 Engineering. Fee \$6

This course covers the detail drawings for pipe fittings, timber joints, mine cars, and ore skips.

Prerequisite: Elements of mechanical drafting.

**Drafting e8—Structural drafting.\*** 3 hours' drafting-room work per week. 1 point Spring Session. Professor HARRINGTON

7:20-10 p. m., Tuesday or Friday, Room 406 Engineering. Fee \$6

This course includes methods used in framing and detailing in structural work, standard connections, beams, columns, plate girders and roof trusses.

Prerequisites: Elements of mechanical drafting

\* Students will be required to furnish their own drafting instruments and materials.

**Drafting e8a—Structural drafting.\*** 6 hours' drafting-room work per week. 2 points Spring Session. Professor HARRINGTON

7:20–10 p. m., Tuesday and Friday, Room 406 Engineering. Fee \$12

This course is similar in character to Drafting e8, but covers the ground more thoroughly. Prerequisite: Elements of mechanical drafting.

### *Structural Mechanics*

NOTE. The following courses in structural mechanics are intended only for men engaged in practical work. They do not correspond to day courses and no university credit is allowed for them. For specific courses in architecture, especially in building materials, see page 22 and following.

**Structural mechanics eX1–X2—Elements and applications of algebra and trigonometry.** 2 points each Session. Mr. R. F. CLARK

6:10–7 p. m., Monday and Thursday, Room 302 Engineering. Fee \$12 each Session

The aim of this course is twofold: first, to give to the student beginning the study of structural mechanics a clear understanding of the mathematics necessary for further study of the subject; second, to fit him to handle his present practical problems with greater facility.

The work of the Winter Session will consist of a drill in the principles and applications of elementary algebra, through quadratics, and including graphic methods. In the Spring Session there will be given a course in plane trigonometry and its application to problems of a practical nature. A thorough drill in the use of logarithms and the slide rule will be included. Students are urged to present for class discussion problems arising in their work.

**Structural mechanics eZ1—Elements of coplanar statics.** 3 points Winter Session. Professor BURNSIDE

6:10–7 p. m., Tuesday and Thursday, Room 510 Fayerweather. Fee \$18

Algebraic and graphic methods are used in parallel; composition and resolution of forces; principles of equilibrium; determination of stresses in simple jointed frames, such as trusses and cranes; centers of gravity and centroids.

Prerequisite: Course eX1–X2, or its equivalent.

Text-book: Maurer's *Technical Mechanics*, third edition.

**Structural mechanics eZ2—Elements of mechanics of materials.** 3 points Spring Session. Professor BURNSIDE

6:10–7 p. m., Tuesday and Thursday, Room 510 Fayerweather. Fee \$18

Continuation of Course eZ1. Moments of inertia and radii of gyration of plane areas, built-up beam and column sections; direct tension, compression and shear; strength of beams, columns and riveted joints; deflection of beams.

Prerequisite: Course eZ1.

Text-book: Merriman's *Mechanics of Materials*.

**[Structural mechanics eZ3–Z4—Designs and details of framed structures.** 3 points each Session. Fee \$18 each Session. Not given in 1918–1919.]

Continuation of Course eZ2. Complete designs, including the designing of the details, with general drawings of the same and estimates of costs, will be made for a wooden roof truss, a steel truss, and a plate girder railway bridge. Fixed and moving loads will be considered in connection with bridge stresses. Parts of other structures will be designed and analyzed to illustrate the applications of the fundamentals in the theory, such as column details, riveted connections eccentrically loaded, pin-plates, and pins.

A special feature of the course is that all of the study, calculations and execution necessary for each complete design will be done in the drafting-room under the direction of the instructor.

Essentially all of the information required by the student relative to the solution of each design will be given in notes prepared by the instructor. The notes will be used as a text; they illustrate the calculations for, and lay-outs of, structures similar to those assigned as

\* Students will be required to furnish their own drafting instruments and materials.



problems and will be supplemented by occasional lectures, and assigned readings in Johnson, Bryan and Turneure: *Modern Framed Structures, Part III*.

Prerequisites: Mechanical drafting e1-2, Structural mechanics eZ1 and eZ2, or their equivalents.

## ENGLISH

For advice in regard to courses designated English A, students should consult Mr. CLARK, Room 710 Journalism Building; in regard to courses in short story writing, Professor BLANCHE COLTON WILLIAMS; and in regard to courses in preparatory English, Mr. DUNCAN, Room 711 Journalism Building.

### *Undergraduate Courses*

**English eA1-A2—English composition.** Lectures, themes and conferences. Credit I, IV. 3 points each Session. Fee \$18 each Session

Section 1—3:10-4:25 p. m., Monday and Thursday, Room 603 Journalism. Mr. D. L. CLARK

Section 2—3:10-4:25 p. m., Monday and Thursday, Room 605 Journalism. Dr. BREWSTER

Section 3—3:10-4:25 p. m., Tuesday and Friday, Room 603 Journalism. Mr. D. L. CLARK

Section 4—3:10-4:25 p. m., Tuesday and Friday, Room 713 Journalism. Dr. SCARBOROUGH

Section 5—4:30-5:45 p. m., Monday and Thursday, Room 713 Journalism. Dr. BREWSTER

Section 6—7-8:15 p. m., Monday and Thursday, Room 503 Hamilton. Dr. WOLFF

Section 7—7-8:15 p. m., Tuesday and Friday, Room 503 Hamilton. Dr. COAD

This course corresponds to English A in Columbia College. It is planned for students who have had four years of high school English or the equivalent. Students are expected to confer regularly with the instructor at times to be appointed within the conference period immediately following each class.

**English eA3-A4—English composition.** Lectures, themes and conferences. Credit I, IV, if taken both Sessions. 1½ points each Session. Dr. WOLFF

9-10:15 a. m., Saturday, Room 611 Journalism. Fee \$9 each Session

This course is equivalent to one-half of English A. It is offered for teachers and students who desire to gain a knowledge of the principles of rhetoric and English composition as they are now taught in the colleges.

Two one-page themes or one three-page theme a week will be called for. Students are expected to confer regularly with the instructor at times to be appointed within the conference period, 10:15-10:45 a. m. No other engagements should be made for this half-hour.

**English eA8—English composition.** Lectures, themes and conferences. Credit I, IV. 3 points Spring Session. Fee \$18.

Section 1—3:10-4:25 p. m., Tuesday and Friday, Room 707 Journalism. Mr. WEAVER

Section 2—8:20-9:35 p. m., Monday and Thursday, Room 603 Journalism. Mr. D. L. CLARK

Course eA1 given in the Spring Session for new students.

**English eA9—English composition.** Lectures, themes and conferences. Credit I, IV. 3 points Winter Session. Fee \$18

Section 1—3:10-4:25 p. m., Tuesday and Friday, Room 512 Journalism. Mr. WEAVER

Section 2—8:20-9:35 p. m., Monday and Thursday, Room 603 Journalism.

Mr. D. L. CLARK

Course eA2 given in the Winter Session for students who have already had English eA1 or eA8 or the equivalent.

**English eB1-B2—English literature and composition.** Lectures, themes and conferences. Credit I, IV. 2 points each Session. Dr. WOLFF

8:45-9:35 p. m., Monday and Thursday, Room 503 Hamilton. Fee \$12 each Session

This course corresponds to English B in Columbia College. It consists in part of the careful and appreciative study of portions of the works of Chaucer, Spenser, Milton, Pope, and Wordsworth.

**English eB3-B4—Introduction to poetry.** Credit I, IV. 3 points each Session. Dr. HALLER

3:10-4:25 p. m., Tuesday and Friday, Room 407 Avery. Fee \$18 each Session

Intensive study of poetic conceptions and forms in a wide range of types: *Golden Treasury*, Homer's *Iliad* (in translation), Spenser's *Faerie Queene*, Milton's *Paradise Lost*, selections from Wordsworth, Shelley, Byron, Tennyson and later poets. Introductory study of literary forms, such as epic, drama, ode, sonnet; brief consideration of the laws of versification.

**English eB5-B6—Survey of English literature.** Credit I, IV. 3 points each Session. Mr. DIBBLE

3:10-4:25 p. m., Monday and Thursday, Room 713 Journalism. Fee \$18 each Session

This course is designed primarily as a survey course in English literature. It aims to acquaint the student with the most important writings of the major authors in each period of the history of English literature.

**English e1-2—Advanced composition. Magazine articles.** Credit I. 3 points each Session. Mr. D. L. CLARK

7-8:15 p. m., Monday and Thursday, Room 603 Journalism. Fee \$18 each Session

This course will aim at teaching the composition of all types of writing that appear in the modern magazine, excepting fiction, drama and poetry. It is designed for the training of professional writers, but other students of ability may elect it with profit. The successful completion of two semesters of college composition, or the equivalent, is required for admission.

There will be much actual composition both oral and written, and frequent individual conferences with the instructor. Able students desiring assistance in the solution of their special problems will not be bound to a fixed program.

**English e1a-2a—English composition.** Advanced course. Lectures, themes and theme criticism. Credit I, IV. 1½ points each Session. Dr. WOLFF

11 a. m.-12:15 p. m., Saturday, Room 611 Journalism. Fee \$9 each Session

Open to students who have passed English A with high standing or to special students of maturity. This course presumes a knowledge of formal rhetoric and training in the essentials of composition, correctness and precision. From two to four pages of manuscript (250-500 words) are required each week.

**English e1b-2b—The short story.** English composition. Theory of fiction writing. Lectures, themes and criticism. 4 points each Session. Fee \$24 each Session. Miss HULL

Section 1—3:10-4:25 p. m., Monday, Room 408 Avery

Section 2—7-8:15 p. m., Monday, Room 610 Journalism

Narration without plot; plot narrative. The course includes a study of the narrative qualities of biography and autobiography, a study of the general necessities of the short story, and

work upon characterization in narrative writing. Students wishing to enter this course must submit during the first week a sketch of 500-1500 words. Five papers of 2000-5000 words are required each Session.

Students who have satisfactorily completed this course should elect English *erc*; evening students may elect the evening section of *erd*.

**English e1c-2c—The short story.** Advanced course. English composition. Theory of fiction writing. 4 points each Session. Fee \$24 each Session

Section 1—9:30-10:45 a. m., Saturday, Room 712 Journalism. Professor BLANCHE C. WILLIAMS

Section 2—3:10-4:25 p. m., Wednesday, Room 713 Journalism. Dr. SCARBOROUGH

A continuation of English *erb-2b*. Story writing studied from the point of the literary critic and of the writer. Details of construction will be investigated and the student called upon to contrive plots. This course, which emphasizes the study of the plot, is open to those who have completed Course *1b-2b*, or to those who submit during the first week a sketch or story of not more than 5000 words as evidence of competency; individual conferences.

**English e1d-2d—The short story.** Second advanced course. 4 points each Session. Fee \$24 each Session

Section 1—11 a. m.-12:15 p. m., Saturday, Room 712 Journalism. Professor BLANCHE C. WILLIAMS

Section 2—8:20-9:35 p. m., Monday, Room 610 Journalism. Dr. SCARBOROUGH

Each section is limited to thirty. Students should consult the instructor at the regular class hour before registration. This course is open only to the following students: those who have done promising work in English *erc-2c*; those who have not completed Course *erc-2c* but submit at the outset a story of merit; and those graduate students specializing in English composition who wish advanced training in theory and criticism.

**English e1e-2e—The writing of juvenile literature.** 4 points each Session  
Miss McLANE

11 a. m.-12:40 p. m., Saturday, Room 707 Journalism. Fee \$24 each Session

Designed for those who wish to write fiction for the juvenile magazines. The course will comprise criticism of work by individual conferences with the instructor; many stories will be discussed in class. Students may devote their time to a limited part of the field if they so desire. They are requested to confer with the instructor before registration.

The topics considered in the lectures will include such subjects as: the writer for children as an educator; his responsibilities; applications of the psychology of childhood and adolescence; considerations of the editor, the publisher, the children's librarian, and the author. Outside speakers including authorities in the latter four fields will address the class from time to time.

**English e3a-4a—Dramatic composition.** 3 points each Session. Fee \$18 each Session.

Section 1—11:10 a. m.-12:25 p. m., Saturday, Room 507 Journalism. Dr. W. M. PATTERSON

Section 2—8:20-9:35 p. m., Friday, Room 507 Journalism. Miss M. LATHAM

This course is designed for students desiring to write plays. In the beginning of the course each student will be required to submit the scenario of a play to be written during the year. These scenarios will be criticized with reference to their suitability for the stage, and the manuscripts prepared from them will be analyzed from the point of view of the dramatist. Specific technical problems will be discussed in class as they come up in the course of the work. Representative recent and current plays will be taken up and analyzed with a view to ascertaining the principles underlying their construction and the causes of their success or failure. Constant practice in plot construction and the preparation of scenarios will be given. In so far as possible the work of the course will be adapted to meet the specific requirements of the individual students.



**English e3b-4b—Dramatic composition.** Advanced course. 4 points each Session. Dr. W. M. PATTERSON

8-10 p. m., Thursday, Room 611 Journalism. Fee \$24 each Session

Prerequisite: English e3a-4a, or the equivalent, and the consent of the instructor.

**English e5a-6a—History and theory of literary criticism.** 3 points each Session. Dr. WOLFF

4-5:40 p. m., Thursday, Room 307 Engineering. Fee \$18 each Session

This course will be primarily historical, treating criticism as a series of attempts to solve problems that seem important to authors and critics of the time. The general stock of critical theory will be found to consist of whatever in these attempts proved to be of recurrent or permanent interest. Before undertaking each critical problem, the student will, therefore, be required to read or to have read representative pieces of the primary literature out of which the problem arose—the *Iliad* before the *Republic*, the *Oedipus Rex* before the *Poetics*.

**English e11a-12a—Public speaking.** Credit I, IV. 2 points each Session. Fee \$12 each Session. Mr. HALLIDAY

Section 1—7:30-9:10 p. m., Wednesday, Room 206 Journalism.

Section 2—7:30-9:10 p. m., Friday, Room 206 Journalism

This course will deal with public address. Its aim is to give practical training to men and women of whom speaking is demanded in their profession.

First term: Three-minute extemporaneous addresses on topics of current interest, supplemented by drill in breathing, articulation, gesture and reading aloud.

Second term: Exposition, argumentation, after-dinner speaking; how to stir the emotions and move to action.

Throughout the year particular attention will be paid to training speakers for various phases of war service.

**English e13-14—Elocution.** Credit I, IV. 2 points each Session. Fee \$12 each Session. Mrs. DAVIS

Section 1—9:20-11 a. m., Saturday, Room 206 Journalism

Section 2—4-5:40 p. m., Wednesday, Room 408 Avery

Winter Session—Breathing, carrying tone, distinct utterance, correction of faults (nasality and breathiness in tone and localisms and sluggishness in speech) and a practical study of English phonetics.

Spring Session—A study of the elements of vocal expression (emphasis, phrasing, inflection, pitch, force, time, etc.).

Drill and individual practice by means of short passages of literature will be given at each lesson.

**English e15-16—English prosody.** Elementary course. 2 points each Session. Mr. HOOKER

8:20-10 p. m., Thursday, Room 609 Journalism. Fee \$12 each Session

A technical study of rhythm and meter in English verse, and of the means by which its various effects are produced; intended not only for those engaged in the composition of original verse, but also for those who desire to achieve a richer appreciation of poetry through the understanding of its technical methods. Illustrations will be drawn from contemporary work as well as from that of accepted masters; attention will be given to the character of different verse-forms, as especially suited to the expression of certain types of thought. This course will run throughout the year; no one will be admitted after the beginning of the course without passing an examination in the work already covered.

**English e15a-16a—English prosody.** Advanced course. 4 points each Session. Mr. HOOKER

2-3:40 p. m., Wednesday, Room 610 Journalism. Fee \$24 each Session

Original work in metrical composition and research into the technical problems of prosody. Individual supervision and criticism of the work of each student. Candidates must have had the elementary course, English e15-16, or its equivalent, and must evince either a natural talent for verse writing or the ability to do research work in the subject.

**English e17-18—Modern literature, English and foreign.** Credit I, IV. 2 points each Session. Professor STEEVES

7:25-8:15 p. m., Monday and Thursday, Room 602 Hamilton. Fee \$12 each Session

This course is a general survey of the principal current literary types, tracing their characteristics from the influences prevalent in the Victorian period and giving attention to foreign artistic sources and parallels. The course requires extended and rapid outside reading of a weekly average of possibly three hundred or four hundred pages. The required reading can generally be found in the branch libraries of the New York Public Library.

**English e21-22—English literature from 1780-1830.** Credit I, IV. 2 points each Session. Mr. J. H. H. LYON

7:30-9:10 p. m., Thursday, Room 407 Avery. Fee \$12 each Session

This course will deal with English romanticism beginning with Cowper. After tracing the first signs of revolt against eighteenth century thought and ideals, it will treat of the new spirit as it expressed itself in the works of the poets and prose writers of the early part of the nineteenth century. While the course will include the work of men not especially well known, it will aim to embrace in considerable detail the poetry of Wordsworth, Shelley, Keats, and Byron. The work will be conducted by means of assigned readings and discussions.

**English e23-24—English literature from 1830-1890.** Credit I, IV. 2 points each Session. Professor PATTERSON

4:20-6 p. m., Wednesday, Room 407 Avery. Fee \$12 each Session

A study of Victorian literature, beginning with Carlyle. In the Winter Session the work will center around Tennyson; in the Spring Session around Browning. Other poets, such as Arnold, Morris, Rossetti, and Swinburne, will be studied. An effort will be made to trace in Victorian literature the development of the idea of democracy. The course will be conducted by means of assigned readings and discussions.

**English e35a-36a—Shakspere.** Credit I, IV. 2 points each Session. Professor TASSIN

11 a. m.-12:40 p. m., Saturday, Room 603 Journalism. Fee \$12 each Session

Shakspere, the condition and character of his theater and times, and the technic of his plays studied from the dramatic rather than from the literary point of view. Each play discussed will be read aloud by the instructor.

**English e39-40—The English novel.** Credit I, IV. 2 points each Session. Dr. BREWSTER

11 a. m.-12:40 p. m., Saturday, Room 605 Journalism. Fee \$12 each Session

Beginning with Samuel Richardson, the course will trace the development of the novel down to the present day, with due attention to the influence of social and economic changes. The work of the Winter Session will include the early Victorian novel. In the Spring Session, the work will center around Meredith and Hardy. The work of a few of the later novelists will also be considered.

The lectures will be supplemented by assigned readings, reports, and discussions.

**English e41a-42a—Contemporary dramatic literature.** 2 points each Session. Mr. CLAYTON HAMILTON

10-11:40 a. m., Saturday, Room 612 Journalism. Fee \$12 each Session

In this course study is made of representative works of the leading modern dramatists from Victor Hugo to Sir Arthur Pinero. Special attention is devoted to the evolution of contempo-

rary stagecraft. The best new plays presented during the current theater season in New York are also analyzed from the point of view of the dramatic critic. The course is especially helpful to students who desire subsequently to write plays or to write dramatic criticism; it brings the actual theater of to-day within the reach of academic study.

### *Comparative Literature*

**Comparative literature e3-4—Masterpieces of European literature.**

Credit I, IV. 3 points each Session. Mr. J. H. H. LYON

4:30–5:45 p. m., Tuesday and Friday, Room 407 Avery. Fee \$18 each Session

This course is designed to give students an intimate acquaintance with those works of literature which are called World Masterpieces. The method followed will be primarily according to types; but the historical importance of each work studied will be made evident. Rapid outside reading is required of books generally found in all public libraries. Lectures, discussions, and reports.

For other courses in comparative literature, see pp. 41, 42.

### *Graduate Courses*

**English e205—Principles of English usage.** Credit II. 3 points Winter Session. Professor KRAPP

10–11:50 a. m., Saturday, Room 610 Philosophy. Fee \$18

Consideration will be given in this course mainly to the principles under which instances of divided use in standard modern English may be grouped.

**English e206—Standard English pronunciation, with special reference to the conditions of American speech.** Credit II. 3 points Spring Session. Professor KRAPP

10–11:50 a. m., Saturday, Room 610 Philosophy. Fee \$18

**English e233-234—English literature in the eighteenth century.** Credit II. 3 points each Session. Professor TRENT

5:10–6 p. m., Tuesday and Friday, Room 307 Philosophy. Fee \$18 each Session

Covers the development of English literature during the eighteenth century, more especially of the poetry. Emphasis is laid on Defoe, Swift, Pope, Thomson, Gray, Collins, Johnson, Cowper, and Burns, but attention is also paid to many minor writers.

**English e237-238—English literature, 1832-1880.** Credit II. 3 points each Session. Professor THORNDIKE

5:10–6 p. m., Monday and Wednesday, Room 307 Philosophy. Fee \$18 each Session

Beginning with 1832, this course covers the literature of the next fifty years, including the work of Macaulay, Carlyle, Mill, Ruskin, Newman, Browning, Tennyson, Arnold, Mrs. Browning, and other writers, as time permits.

### *Preparatory Courses*

**English eV1-V2—Elementary English.** 2 points each Session. Miss DILLER

5–5:50 p. m., Wednesday and Friday, Room 408 Hamilton. Fee \$12 each Session

Students in this course will study elementary principles of English grammar, will write frequent short compositions on simple subjects, and make brief oral recitations on assigned topics. Emphasis will be placed on pronunciation and spelling; considerable correction will be done in class. Foreign students and those unfamiliar with English idiom are advised to select this course.



**English eW1—English grammar.** 3 points Winter Session. Fee \$18

Section 1—1:45-3:00 p. m., Monday and Thursday, Room 612 Journalism.  
Mr. DUNCAN

Section 2—7:00-8:15 p. m., Monday and Thursday, Room 612 Journalism.  
Mr. DUNCAN

Section 3—8:20-9:35 p. m., Monday and Thursday, Room 507 Hamilton. Mr. PECK

This course is intended for mature students who desire to acquire a thorough knowledge of the elementary principles of English grammar. After a rapid review of the parts of speech and their modifications, a detailed treatment of word elements, phrase elements, and clause elements and their relations in sentences will be given. Much time will be devoted to the analysis and synthesis of different types of sentences. Written work will be required for each session. Punctuation will be regarded as a system of points to denote grammatical relations, and thus considerable attention will be given to this subject.

This course is recognized as a credit course for promotion licenses by the Board of Education. Students will be expected to confer regularly with the instructor at such times as he may designate.

Students who contemplate taking college entrance English, either English eX1-X2 or eY1-Y2, should have completed this course or its equivalent.

Text-book: Blount and Northrup's *Elementary English Grammar*.

**English eW2—English composition.** 3 points Spring Session. Fee \$18

Section 1—1:45-3:00 p. m., Monday and Thursday, Room 612 Journalism.  
Mr. DUNCAN

Section 2—7:00-8:15 p. m., Monday and Thursday, Room 612 Journalism.  
Mr. DUNCAN

Section 3—8:20-9:35 p. m., Monday and Thursday, Room 507 Hamilton. Mr. PECK

This course is an elementary course in English composition and is especially planned for those who wish to gain power in writing through practice. The rhetorical essentials of narration, description, exposition, and argumentation will be discussed. Composition subjects will be drawn from the students' own experiences and from contemporary life rather than from literature. Weekly themes will be required, and by means of these the students are expected to master, so far as time permits, the technique of simple prose expression.

Students will be required to consult regularly with the instructor at such times as he may designate. This course, with the first half year, English eW1, furnishes preparation for English eX1-X2 and English eY1-Y2.

Text-books: Woolley's *Handbook of Composition* and Brook's *English Composition*, Book II.

**English eW4—English grammar.** 3 points Spring Session. Mr. DUNCAN

8:20-9:35 p. m., Monday and Thursday, Room 612 Journalism. Fee \$18 .  
Course eW1 repeated in the Spring Session.

**English eW5—English composition.** 3 points Winter Session. Mr. DUNCAN

8:20-9:35 p. m., Monday and Thursday, Room 612 Journalism. Fee \$18  
Course eW2 given in the Winter Session.

**English eX1-X2—English composition and literary readings.** Reading of classics, lectures, oral reports, class discussions, compositions, and written tests. 3 points each Session. Fee \$18 each Session

Section 1—3:10-4:25 p. m., Monday and Thursday, Room 612 Journalism. Mr. DUNCAN

Section 2—7:00-8:15 p. m., Monday and Thursday, Room 507 Hamilton. Mr. PECK

This course is planned to give students an appreciation of literature and facility in composition. The work done will be in actual sequence to that done in English eW1 and English eW2.

In addition to the reading of masterpieces in prose and poetry, considerable attention will be given to the planning of compositions and to theme writing. The masterpieces studied will be analyzed in such a way as to show how to read and how to use these masterpieces to develop power in composition writing. The course will meet the needs of people who, while not desiring credit for entrance to college, desire guidance in reading, speaking, and writing. The successful completion of this course will count, in part, toward the removal of entrance conditions in English 1 and English 2. Students will be required to confer regularly with the instructor at such times as he may designate.

Prerequisite: a knowledge of elementary English grammar such as may be acquired in English eW1 or English eW4.

Text-books: Woolley's *Handbook of Composition* and ten classics selected from the list prescribed by the Committee on Uniform Entrance Requirements.

**English eY1-Y2—Literature and composition.** Themes, lectures, class discussions, and tests. 3 points each Session. Fee \$18 each Session

Section 1—3:10-4:25 p. m., Tuesday and Friday, Room 612 Journalism. Mr. DUNCAN

Section 2—7:30-10:00 p. m., Tuesday, Room 507 Hamilton. Mr. PECK

This course is planned for three classes of people: (1) those who wish to gain adequate preparation for various college courses in English; (2) mature people who wish to gain accuracy in expression, power in writing, and general culture; and (3) students who wish to prepare themselves to pass the examinations of the College Entrance Examination Board.

The work will consist of a detailed study of four classics, a survey of English literature, and the preparation of many outlines and themes. Emphasis will be laid upon adequacy of information and accuracy of expression. The completion of this course with a grade of B will remove entrance conditions in English 2 in Columbia College. Students will be required to confer regularly with the instructor at such times as he may designate. Students already registered in this course who show obvious inability to carry the work will be transferred to Course eX1-X2.

Prerequisite: eX1-X2 or its equivalent (three years of high school English).

Text-books: Woolley's *Handbook of Composition*, Long's *English Literature*, Mitchell and Carpenter's *Exposition in School-Room Practice*, and four classics selected from the list prescribed by the Committee on Uniform Entrance Requirements.

**English eY4—College entrance English.** 3 points Spring Session. Mr. PECK

7:30-10 p. m., Wednesday, Room 507 Hamilton. Fee \$18

Course eY1 repeated in the Spring Session.

**English eY5—College entrance English.** 3 points Winter Session. Mr. PECK

7:30-10 p. m., Wednesday, Room 507 Hamilton. Fee \$18

Course eY2 given in the Winter Session.

**English eZ1-Z2—English spelling.** 1 point each Session. Fee \$6 each Session. Mr. DUNCAN

Section 1—4:30-5:20 p. m., Wednesday and Friday, Room 612 Journalism

Section 2—6:10-7 p. m., Monday and Thursday, Room 612 Journalism

This course is designed for mature students who spell badly. An effort will be made to teach spelling through the threefold appeal to the eye, the ear and the touch. While considerable time will be devoted to phonics, syllabication and rules of orthography, much more time will be given to actual spelling. The aim will be to discover and correct the deficiencies of the individual student. Attention will be given to words in common use and words commonly misspelled rather than to unfamiliar and technical words. Each student will be required to keep an alphabetical list of all words he misspells.

Text-book: Eldridge's *Business Speller and Vocabulary*.

**Business English e1-2—Business English and commercial correspondence.** 3 points each Session. Fee \$18 each Session

Section 1—2-3 p. m., Tuesday and Friday, Room 612 Journalism. Mr. DUNCAN

Section 2—7:30-9:20 p. m., Wednesday, Room 612 Journalism. Mr. DUNCAN

Section 3—7:30-9:20 p. m., Friday, Room 612 Journalism. Mr. PECK

This course is intended for office assistants, private secretaries, and those who wish to become proficient in effective business communication. The aim is to teach how to use words in such a way as to make people act. The principles of literary composition will be applied to commercial correspondence. Business situations will be analyzed, letters classified into type forms, and the requisites of each class will be exemplified by many models. The psychology of advertising and the sales letter will be analyzed, and principles derived from this analysis will be applied in actual practice. The course will be not merely theoretical, but practical. Every student will be required to write several letters each week, and no one who has not sufficient time for such written work should take this course.

Special consideration will be given to letters of application, letters of complaint, sales letters, follow-up letters, and collection letters.

A prerequisite to this course is a knowledge of the principles of elementary English grammar.

## FINE ARTS

**Architecture e27—Ancient architecture.** Credit I. 2 points Winter Session. Curator BACH

4-4:50 p. m., Tuesday and Thursday, Room 408 Avery. Fee \$12

The ancient architecture of Egypt, Assyria, Persia, Greece, and Rome.

**Architecture e28—Medieval architecture (to Gothic).** Credit I. 2 points Spring Session. Curator BACH

4-4:50 p. m., Tuesday and Thursday, Room 408 Avery. Fee \$12

Early Christian, Byzantine and Romanesque architecture in Italy, France, England and Germany; analytical and critical discussion of the historic development, characteristics and chief examples of the medieval styles.

**Architecture e31-32—Ancient ornament.** Credit I, V. 1 point each Session. Mr. HAMLIN

6-6:50 p. m., Friday, Room 407 Avery. Fee \$6 each Session

General classifications; origins, primitive and savage ornament; the historic ornament of Egypt, Assyria, Persia, Greece and Rome, including Ægean, Cypriote, Phoenician and Etruscan ornament; the development of the styles, the common motives and patterns of both architectural ornament and the minor arts.

No credit will be given for Architecture e31-32 unless taken with one other course.

**[Architecture e33-34—Medieval ornament]** Will not be given in 1918-1919; will be offered in 1919-1920.]

**Architecture e35-36—Modern ornament.** Credit I, V. 1 point each Session. Mr. HAMLIN

6-6:50 p. m., Wednesday, Room 407 Avery. Fee \$6 each Session

The ornament of the Renaissance in Italy, France, Germany, Spain, the Netherlands, and England; American 'Colonial' ornament; developments in the nineteenth century in Europe and America; modern phases and tendencies in ornament. Periodic drawings.

No credit will be given for Architecture e33-34 unless taken with one other course.

**Fine arts e51a—Sculpture and the decorative arts.** A study of the originals in the Metropolitan Museum of Art. 2 points Winter Session. Fee \$12. Dr. KRIEHN



Section 1—2:30-4:10 p. m., Friday, Metropolitan Museum

Section 2—10:30-12:10 p. m., Saturday, Metropolitan Museum

Section 3—8:15-9:55 p. m., Saturday, Metropolitan Museum. Begins October 13

Section 4—10:30 a. m.-12:10 p. m., Monday, Metropolitan Museum. Begins October 21

Section 4 will be given only if the other sections are filled.

This course, combined with Fine arts e52a, offers a year's systematic study of the most important art objects in the Metropolitan Museum. It is designed especially to teach the appreciation of sculpture and the decorative arts, as practised in the great historic styles, and to outline briefly their history. Among the subjects treated, besides sculpture proper, will be ivories, enamels, ceramics, small bronzes, terracottas, furniture, tapestries and other decorative arts. Opportunities for the study of these subjects rivaled only by the best European collections are offered in the recently opened galleries of classical art, the new J. P. Morgan memorial wing of decorative arts, the galleries of Egyptian art, the collection of Rodin sculptures, and in other departments. Special attention will be devoted to the needs of teachers and university students, for whom Section 2 is designed. Use will be made of the important Museum library, with its collection of photographs and other reproductions.

**Fine arts e52a—The paintings of the Metropolitan Museum of Art.** A study of the originals in the Museum. 2 points Spring Session. Fee \$12. Dr. KRIEHN

8-9:30 p. m., Wednesday. Fee \$12 Spring Session

Section 1—2:30-4:10 p. m., Friday, Metropolitan Museum

Section 2—10:30 a. m.-12:10 p. m., Saturday, Metropolitan Museum

Section 3—8:15-9:55 p. m., Saturday, Metropolitan Museum

Section 4—10:30 a. m.-12:10 p. m., Monday, Metropolitan Museum

Section 4 will be given only if the other sections are filled.

Planned for all who wish to learn how to judge and enjoy painting. A continuation of the preceding course, but may be taken independently. While special attention will be given to the technical qualities of painting, its meaning will not be neglected. Each Session will be devoted to a school or to individual masters of painting; but the treatment will be in historic sequence, thus outlining the history of painting. Among the topics treated are Italian painting, both primitive and developed; the early Netherlandish and German schools; Flemish and Spanish masters; Dutch painting, with special emphasis on Rembrandt (Altman collection); the old English masters; French painting with emphasis on the Barbizon school (Vanderbilt collection); modern European painting; American painting, both early and contemporary. Students, teachers, and others wishing to take the examination should enroll, if possible, in Section 2, which is especially designed for them.

**Fine arts e53-54—Outlines of art history.** 2 points each Session. Dr. KRIEHN

8:20-9:35 p. m., Monday, Room 407 Avery. Fee \$12 each Session

Requires fifteen students.

A general course, treating the great epochs of art in the western world from the appreciative as well as the historic point of view. The chief subjects are painting, sculpture, and architecture, with emphasis on that phase in which the age or people found its highest expression; in sculpture, for example, in ancient Greece; architecture and decoration during the Roman and medieval epochs, on the painting and sculpture of the Renaissance, and on painting during the modern period. There will be special lectures on the great masters in whose works art culminated, such as: Michaelangelo, Raphael and Titian in Italy, Rubens and Van Dyck in Flanders, Hals and Rembrandt in Holland, Velasquez in Spain, and Rodin in France. During the nineteenth century, the emphasis will be placed on the painting of France and the United

States. A full syllabus will be distributed, and the lectures will be illustrated with the stereopticon.

## GEOLOGY

**Geology e1—General geology.** A general introduction to the subject of geology. Lectures and laboratory work. Credit I, IV. 3 points Winter Session. Mr. MORRIS

8:20–10 p. m., Tuesday and Friday, Room 401 Schermerhorn. Fee \$18

This course covers an introduction to the common rocks, their structure, origin, and occurrence in nature; rock weathering and its products, geological activities of the air; the streams and the sea; characteristics and work of glaciers, volcanoes, and earthquakes.

The laboratory work consists of a study and identification of common rocks, drawing of profiles and structure sections, interpretation of topographical maps, etc. There will be several field trips on Saturday afternoons.

No prerequisite. Equivalent to Geology 1 in Columbia College. A knowledge of elementary chemistry is desirable.

Text-book: Chamberlin and Salisbury, *College Geology*.

**Geology e2—Historical geology.** The origin of the earth and its development—succession of plant and animal life. Lectures and laboratory. Credit I, IV. 3 points Spring Session. Dr. GALLOWAY

8:20–10 p. m., Tuesday and Friday, Room 401 Schermerhorn. Fee \$18

This course deals with the origin of continents and ocean basins and their development during successive geologic periods, characteristic sections and their interpretations, study of important types of fossils as indication of geologic age; the glacial period and the antiquity of man; development of surface features or physiography.

The laboratory work consists of the study of maps, the making of sections and the identification of fossils, followed by work with physiographic models. There will be several excursions on Saturday afternoons in the spring.

Prerequisite: Geology 1 or Geology e1 or s1.

Text-books: Chamberlin and Salisbury, *College Geology*; Grabau, *Syllabus of Historical Geology*; Pirsson and Schuchert, *Geology*.

**Geology e3—Lithology.** An introduction to the study of minerals and rocks. Recitations and laboratory work. Credit IV. 3 points Winter Session. Mr. COLONY  
7–8:20 p. m., Tuesday and Friday, Room 401 Schermerhorn. Fee \$18

The methods of determining minerals, especially rock-forming minerals; classification of rocks; laboratory practice with both minerals and rocks. The object is to attain facility in sight recognition and discrimination of these natural products.

Text-book: Kemp's *Handbook of Rocks*.

**Geology e4—Elementary petrography.** An introduction to the study of rocks, from thin sections, with the microscope. Laboratory demonstration method of work. Credit I, V. 3 points Spring Session Mr. COLONY

6:30–8:10 p. m., Tuesday and Friday, Room 401 Schermerhorn. Fee \$18

Methods of mineral identification; structural differences and classification of rocks. A standard set of fifty rocks is used as the basis of this course and particular attention is given to forms of description.

Text-books: Luquer's *Minerals in Rock Sections* and Harker's *Petrology*.

## GERMAN\*

**German eA1-A2—Elementary course.** Credit I, IV. 4 points each Session. Fee \$24 each Session

\* Students must understand that there is always a possibility that courses in this subject may be withdrawn

Section 1—4:30-5:55 p. m., Tuesday, Wednesday, and Friday, Room 713 Journalism

*Section 2 limited to men matriculated in Columbia College.*

Section 2—1:10-2 p. m., Monday, Tuesday, Wednesday, Thursday and Friday, Room 507 Hamilton. Professor HEUSER

This course familiarizes the beginner with the common vocabulary and the fundamental, grammatical facts of the language so as to enable him to read easy German at sight. Reading forms part of the work from the beginning, together with grammar study, easy exercises in composition, and a considerable amount of colloquial practice in the phrases of everyday life. Although this course is intended for beginners it may be taken with profit by those who have some previous knowledge of the language but are deficient in grammar. Students entering in February should take Course eA8. For Course eA1 no previous knowledge of German is required.

The entire course completes the college entrance requirement (*a* and *x*) in elementary German.

**German eA8—Elementary course.** Credit I, IV. 4 points Spring Session. Mr. SCHOLZ

7-8:25 p. m., Monday, Wednesday, and Thursday, Room 402 Hamilton. Fee \$24

Equivalent to German eA1, but given in the Spring Session for students who enter at that time. This course should be followed by German eA9 (equivalent to German eA2). For description see German eA1-A2 above.

**German eA9—Elementary course.** Credit I, IV. 4 points Winter Session. Mr. SCHOLZ

7-8:25 p. m., Monday, Wednesday, and Thursday, Room 402 Hamilton. Fee \$24

Equivalent to German eA2, but given in the Winter Session. For description see German eA1-A2 above.

**German eB1-B2—Intermediate course.** Credit I, IV. 4 points each Session. Mr. SCHOLZ

4:30-5:55 p. m., Tuesday, Wednesday and Friday, Room 603 Journalism. Fee \$24 each Session

This course is intended for students who have satisfied the college entrance requirement in elementary German or have taken Course eA1-A2 or an equivalent. Course eB2 completes the requirement in intermediate German (*b* and *y*) for college entrance or for a degree.

The work of this course includes the reading (partly at sight), of moderately difficult prose and verse by standard modern and classical authors; grammatical instruction, beginning with a rapid review of the elements and embracing the fundamental principles of syntax and word-formation; exercises in composition and free reproduction, oral and written, with considerable colloquial practice. The texts studied will be selected with reference to variety of style and vocabulary and will include Freytag's *Die Journalisten*, Heine's *Harzreise*, and Schiller's *Wilhelm Tell*.

Prerequisite: Elementary entrance, German eA2 or an equivalent.

**German eB11-B12—Shorter intermediate course.** Credit I, IV. 3 points each Session

7-8:15 p. m., Monday and Thursday, Room 408 Hamilton. Fee \$18 each Session

This course is equivalent in hours to three-fifths of German eB1-B2. It includes the fundamental work of the longer course in grammar with a smaller amount of reading (about 450 pages) and much less composition and oral practice. The shorter course is not accepted in satisfaction of the requirement in Intermediate German unless supplemented by German eBO1-BO2.

Prerequisite: as for German eB1-B2.



**German eB01-B02—Intermediate course. Composition and oral drill.** Credit I, IV. 2 points each Session

8:20–9:10 p. m., Monday and Thursday, Room 408 Hamilton. Fee \$12 each Session

This course aims to meet the demand for special practice in writing and speaking the German language. It must be taken with eB11–B12 by students who wish to satisfy the requirement in Intermediate German, but may be elected independently of that course.

**German eE1-E2—Readings in science.** Credit I. 3 points each Session.  
Mr. SCHOLZ

8:30–9:45 p. m., Monday and Thursday, Room 402 Hamilton. Fee \$18 each Session

This course is designed to enable the student to read difficult German with facility in order that he may consult technical journals and works of reference in that language in connection with his later professional studies. For further practice in writing and speaking, German eB01–B02 is recommended to supplement eE1–E2.

For students who intend to take the six-year Collegiate and Engineering Course. Equivalent to the prescribed course in Columbia College.

Prerequisite for Course eE1: eB2, or an equivalent; for eE2: eE1.

**German eE4—Readings in science.** Credit I. 3 points Spring Session.  
Professor SCHULZE

4:30–5:45 p. m., Monday and Thursday, Room 402 Hamilton. Fee \$18

Equivalent to Course eE1 of the Winter Session (for description see above). May be followed by German sE2 (equivalent to eE2), given in the Summer Session.

Prerequisite: as for Course eE1.

**German eJ1-J2—Readings in newspapers and magazines.** Credit I, IV.  
3 points each Session

7–8:15 p. m., Tuesday and Friday, Room 402 Hamilton. Fee \$18 each Session

This course is intended for students who look forward to entering the School of Journalism; also for those who wish to acquire facility in reading as preparation for using the language in the study of history, economics or politics; rather than as an introduction to the study of German or other literature (see German e5a–6a). The work includes a review of German syntax, with some practice in writing and speaking (see also German eB01–B02 and e11–12).

Prerequisite: Intermediate entrance, German eB2, or an equivalent.

**German e5a-6a—Introduction to the classics.** Selected works of Goethe, Schiller, and Lessing. Credit I, IV. 2 points each Session. Professor SCHULZE  
3:20–5 p. m., Wednesday, Room 406 Hamilton. Fee \$12 each Session

This course aims to make the student familiar with representative works of the classical period and the outlines of its history, and to increase the student's command of vocabulary and idiom by means of supplementary sight reading and by interpretation of the text without the medium of translation.

The course will include the reading and study of selected dramas of Lessing, Goethe, and Schiller, with brief discussion of other works in connection with assigned private reading. As the course affords but little practice in speaking and writing German, it is recommended that Course eB01, B02 or e11–12 be taken in connection with it.

Prerequisite: Course eB2, or an equivalent.

Text-books required at the beginning: Lessing's *Emilia Galotti*, edited by Winkler (Heath); Rolleston's *Life of Lessing*, published in the 'Great Writers' series (Walter Scott, London).

**German e11-12—Composition and oral practice.** Advanced course. Credit I, IV. 2 points each Session

11 a. m.–12:40 p. m., Saturday, Room 308 Philosophy. Fee \$12 each Session

Intended to continue the work of Course e3-4 or s3-4, but has at the same time a distinctly literary content. It presupposes a good reading knowledge and fair ability to understand the spoken language. This course will be conducted wholly in German. The conversation will be upon topics chosen from the field of literature, daily life and current events. The composition work will consist in the rendering of outlines of the literature read and in the preparation of original themes.

**German 101-102—History of German literature.** Winter Session from 800 to 1500 A.D.; Spring Session from 1500 to 1800 A.D. Credit II. 3 points each Session. Professors REMY (Winter Session) and BRAUN (Spring Session)

11-11:50 a. m., Monday, Wednesday and Friday, Room 508 Philosophy. Fee \$18 each Session

The course consists of lectures, readings from Thomas' *Anthology*, and essays or reports on assigned topics. The lectures introduce the student to the more important writers and writings and aim to give a clear, though very general, idea of the character of epochs, and the growth and decay of literary tendencies.

**German 103-104—Goethe's Faust.** First and second parts. Credit II. 3 points each Session. Professor HERVEY

3:10-4 p. m., Tuesday and Thursday, Room 514 Philosophy. Fee \$18 each Session

This course, intended for the enjoyment of *Faust* as poetry, consists of the reading and interpretation, by lecture and discussion, of the entire poem with a few unimportant omissions. Attention is given to its genesis and its significance in the study of Goethe's life and works, to its ethical import and artistic character as a whole.

Prerequisite: Course e5a-6a or an equivalent reading knowledge of German.

Students will require for this course Goethe's *Faust*, First and Second Parts, 2 vols., edited by Calvin Thomas (Heath).

**German 105—German literature in the nineteenth century;** from the rise of the Romantic School to the revolution of 1848. Credit II. 3 points Winter Session. Professor HEUSER

4:10-5 p. m., Monday and Wednesday, Room 514 Philosophy. Fee \$18

**German 106—Modern and contemporary German drama** since the revolution of 1848. Credit II. 3 points Spring Session. Professor HEUSER

4:10-5 p. m., Monday and Wednesday, Room 514 Philosophy. Fee \$18

## GOVERNMENT

**Government e1-2—American government.** Credit I, IV. 3 points each Session. Fee \$18 each Session. Dr. BOOTS or Mr. MACMAHON

3:10-4:25 p. m., Monday and Thursday, Room 306 Engineering

A general survey of the whole field, based largely on Beard's *American Government and Politics* (edition of 1914), and designed both for those who wish to teach the subject in the schools and for those who wish to gain an insight into the responsibilities of citizenship. Attention will be confined to national government in the Winter Session; to state, municipal, and local government in the Spring Session.

Identical with Government 1-2 in Columbia College.

**Government 105—Party government in the United States.** Credit II. 3 points Winter Session. Professor SAIT

4:10-6 p. m., Monday, Room 515 Kent. Fee \$18

Relation of political parties to framework of government; character of party antagonisms in United States historically considered; origin and development of party organization and machinery; national convention and campaign; state, local and municipal party organization; sources of strength in party machinery; ballot reform, primary legislation and corrupt practices acts.

**Government 106—Municipal government.** Credit II. 3 points Spring Session. Professor MCBAIN

4:10-6 p. m., Monday, Room 515 Kent. Fee \$18

A study of the relation between the city and the state and of the organization, operation and problems of city government in the United States.

**Government 107-108—Comparative government and politics.** Credit II. 3 points each Session. Professor SALT

4:10-6 p. m., Wednesday, Room 515 Kent. Fee \$18 each Session

An analysis of the English, French and German governments with emphasis upon their actual operation and the functioning of political parties. In comparing European and American practice, students will be supposed to have some acquaintance with the working of American institutions.

## GREEK

**Greek e1-2—Elementary Greek.** Credit I, IV. 4 points each Session. Professor YOUNG

4:30-5:55 p. m., Monday, Wednesday and Friday, Room 501 Hamilton. Fee \$24 each Session

This course is intended for students who have no previous knowledge of Greek.

Reading and oral drill will form a large part of the classroom work and a careful study will be made of the fundamental forms and grammatical principles of the language. The prepared work will be limited to three classroom hours each week. Thirty-five minutes of each period will be devoted to additional oral and written drill and practice. The work will be based primarily upon Xenophon's *Anabasis* but in the Spring Session selections from Homer's *Iliad* will also be read.

**Greek e3—Homer.** Credit I, IV. 3 points Winter Session. Professor GUERNSEY

3:10-4 p. m., Monday, Wednesday and Friday, Room 501 Hamilton. Fee \$18

This course will cover the first three books of the *Iliad*. Although the course will be primarily literary in purpose, it will include a study of constructions, poetical forms, and prosody.

Prerequisite: Greek 1-2 or its equivalent.

**Extension students who are qualified will also be admitted to the following courses:**

**Greek 149—Introduction to Greek art and archaeology.** 3 points Winter Session. Professor YOUNG

3:10 p. m., Monday, Wednesday and Friday, Room 401 Avery. Fee \$18

Lectures, required reading, and reports upon assigned topics with occasional visits to the Metropolitan Museum of Art. The course will begin with a brief survey of the Prehellenic antiquities, but the main stress will be laid on historic Greek art, especially in the fields of architecture and sculpture, although there will also be some study of vases, terra-cottas, etc.

**Greek 156—Topography and monuments of Attica and Athens.** 3 points Spring Session. Professor YOUNG

3:10 p. m., Monday, Wednesday and Friday, Room 401 Avery. Fee \$18

Lectures, required reading, and reports upon assigned topics. The course will offer a general survey of the subject with special emphasis upon the extant monuments.



**Greek 201-202—Greek literature.** Part I, poetry. 3 points each Session. Professor VAN HOOK

5:10 p. m., Wednesday and Friday, Room 712 Philosophy. Fee \$18 each Session

Lectures with readings partly in class and partly in private. This course will be so conducted that it may be taken by those who can not read Greek. Students proficient in Greek will meet Professor VAN HOOK for a third hour.

Designed to give a general survey of Greek poetry. The first term will be devoted to the study of epic, lyric, and pastoral poetry; the second term, to the Attic poetic drama.

## HISTORY

**History eX1—American history.** Texts, discussions, readings, notes, maps. 3 points Winter Session. Professor ARNETT

4:30-5:45 p. m., Tuesday and Friday, Room 413 Havemeyer. Fee \$18

3 points Spring Session. Professor ARNETT

This course aims to cover the requirements for college entrance and to give a brief survey of the essential facts of American history from the earliest discoveries to the present time. The study will give due emphasis to political, territorial, commercial, industrial and social development. The successful completion of this course will count toward the removal of entrance conditions in history.

**History eX2—American history.** Texts, discussions, readings, notes, maps. 3 points Winter Session. Professor ARNETT

11 a. m.—12:15 p. m., Tuesday and Friday, Room 605 Journalism. Fee \$18

Course eX1 repeated in the Spring Session.

**History eX3—Ancient history.** Texts, discussions, readings, notes, maps. 3 points Winter Session. Professor ARNETT

11 a. m.—12:15 p. m., Tuesday and Friday, Room 605 Journalism. Fee \$18

This course aims to cover the requirement for college entrance and to give a brief survey of the essential facts of ancient history from the earliest times to the age of Charlemagne. The study will present the life of the peoples, their social and political development, and the growth and expansion of the nations of the ancient world. The successful completion of this course will count toward the removal of entrance conditions in history.

**History eX4—Ancient history.** Texts, discussions, readings, notes, maps. 3 points Spring Session. Professor ARNETT

4:30-5:45 p. m., Tuesday and Friday, Room 413 Havemeyer. Fee \$18

Course eX3 repeated in the Spring Session.

**History eA1—The foundations of modern Europe.** Lectures, readings and discussions. Credit I, IV. 3 points Winter Session. Fee \$18

Section 1—4:30-5:45 p. m., Monday and Thursday, Room 702 Hamilton. Professor KENDRICK

Section 2—8:20-9:35 p. m., Tuesday and Friday, Room 702 Hamilton. Dr. BARNES

After a brief survey of the contributions of the ancient world and of the middle ages to European civilization, the course will deal with important political, economic and intellectual achievements from the fifteenth century to the eighteenth. It will treat of the spirit of reform and of revolt, oversea colonization, monarchy by divine right, the various aspects of the 'old régime', the French Revolution, and the era of Napoleon.

Texts: Hayes, *Syllabus of Modern History*; Hayes, *Political and Social History of Modern Europe*, 2 vols.

This course is equivalent to History A1 as given in Columbia College.

**History eA2—Modern and contemporary history.** Lectures, readings and discussions. Credit I, IV. 3 points Spring Session. Fee \$18

Section 1—4:30–5:45 p. m., Monday and Thursday, Room 702 Hamilton. Professor KENDRICK

Section 2—8:20–9:35 p. m., Tuesday and Friday, Room 702 Hamilton. Dr. BARNES

This course is designed as an introduction to current national and international problems. The principal topics will be the work of the Congress of Vienna in reshaping the map of Europe, the industrial revolution, the development of Italian and German unity, the Third French Republic, the rise of Russia, the intellectual achievements of the nineteenth century, modern social problems and Imperialism in Africa and the Orient.

This course is equivalent to History A2 as given in Columbia College.

**History eA4—The foundations of modern Europe.** Lectures, readings and discussions. Credit I, IV. 3 points Spring Session. Fee \$18

Section 1—4:30–5:45 p. m., Monday and Thursday, Room 703 Hamilton. Dr. W. T. MORGAN

Section 2—7–8:15 p. m., Tuesday and Friday, Room 702 Hamilton. Professor ARNETT

Course eA1 repeated in the Spring Session.

**History eA5—Modern and contemporary history.** Lectures, readings and discussions. Credit I, IV. 3 points Winter Session. Dr. W. T. MORGAN

4:30–5:45 p. m., Tuesday and Friday, Room 702 Hamilton. Fee \$18

Course eA2 given in the Winter Session.

**History eA9—The formation of the United States.** Lectures, readings and discussions. Credit I, IV. 3 points Winter Session. Dr. Fox

7–8:15 p. m., Monday and Thursday, Room 717 Hamilton. Fee \$18

After a survey of the European background of American history and the establishment in the New World of European institutions of contrasted types, attention is fixed upon the English settlements, their development, and their experience with the colonial system seeking to protect and control them, resulting finally in revolt, union and the organization of the United States.

Syllabus: Schuyler and Fox, *Syllabus of American History*.

This course is equivalent to History A9 as given in Columbia College, and forms an introduction to the advanced study of early American history.

**History eA10—The development of American nationality.** Lectures, readings and discussions. Credit I, IV. 3 points Spring Session. Dr. Fox

7–8:15 p. m., Monday and Thursday, Room 717 Hamilton. Fee \$18

Beginning with the triumph of Jeffersonian democracy, this course considers our foreign relations culminating in the War of 1812, and traces the influence of manufactures, the frontier and slavery upon the sentiment of nationalism. The Civil War is treated with emphasis upon its political and constitutional phases; followed by a survey of reconstruction in the southern states, after which attention is paid to the development of railroads, the conflicts of capital and labor, currency and the tariff, imperialism and political readjustment to meet new social needs

Syllabus as for History eA9.

This course is equivalent to History A10 as given in Columbia College and forms an introduction to the advanced study of later American history.

**History e19-20—Imperialism in world politics in the nineteenth and twentieth centuries.** Credit I, IV. 2 points each Session. Professor CARMAN

2:45–4:25 p. m., Thursday, Room 512 Journalism. Fee \$12 each Session

A study of the recent growth of imperialism, especially its connection with the world war, with the general aim of bringing the happenings of the present day into correlation with such fundamental features of nineteenth century history as nationalism, democracy, socialism, militarism and Imperialism.

### **History 121—The history of the intellectual class in Europe: Part I.**

Credit II. 3 points Winter Session. Professor J. H. ROBINSON

2:10-3 p. m., Tuesday and Thursday, Room 309 Havemeyer. Fee \$18

This course and History 122 follow changes in interests, opinions and attitude of mind of intellectual classes from the days of the Greek Sophists to our own. Antecedents of intellectual history; primitive reasoning; general range of Greek speculation; Christian conception of man and the world; medieval universities and the revival of Aristotle.

### **History 122—The history of the intellectual class in Europe: Part II.**

Credit II. 3 points Spring Session. Professor J. H. ROBINSON

2:10-3 p. m., Tuesday and Thursday, Room 309 Havemeyer. Fee \$18

*Open only to those who have taken History 121.* Decline of Scholasticism; intellectual aspect of the 'Renaissance' and the Protestant Revolt; rise of modern scientific spirit; Deism; French Philosophes; novel elements in contemporaneous intellectual life.

### **History e125—History of Russia.** Lecture-study course. Credit II. 3

points Winter Session. Professor PRINCE

4-4:50 p. m., lecture; 4:50-5:40 p. m., conference, Wednesday, Room 701 Philosophy. Fee \$18

The work will cover a careful treatment of Russian history from the earliest times to the modern period, with a discussion of the attitude of Russia during the present war and a brief survey of its literary development. In connection with this work should be noted the following course which stands in close relation to the history of Russia and is a desirable supplement in order to understand Russian development.

### **History e126—History of Russia in connection with Serbia, Bulgaria, Poland, and Bohemia.** Credit II. 3 points Spring Session. Professor PRINCE

4-4:50 p. m., lecture; 4:50-5:40 p. m., conference, Wednesday, Room 701 Philosophy. Fee \$18

### **History e153—The principle of nationality in the nineteenth and twentieth centuries.** Credit II. 3 points Winter Session. Professor HAYES

4:10-5:50 p. m., Tuesday, Room 610 Philosophy. Fee \$18

Deals with the operation of the principle of nationality in Europe with special reference to Germany, France, Italy, Russia and Great Britain. Treats incidentally of the governments and political parties of those countries. An introduction to the contemporary Great War.

### **History e154—Special problems of various modern nationalities.**

Credit II. 3 points Spring Session. Professor HAYES

4:10-5:50 p. m., Tuesday, Room 610 Philosophy. Fee \$18

A continuation of History e153. Deals with problems of democracy, imperialism and militarism as they affect Germany, France, Italy, Russia and Great Britain, and treats of international relations since 1871.

### **History e157-158—The history of England.** Lectures, readings and discussions. Credit II. 3 points each Session. Professor SCHUYLER

9:10-10:50 a. m., Saturday, Room 615 Kent. Fee \$18 per Session

A survey of English history from the earliest times to the present, with emphasis on the modern period. Deals with economic, social, intellectual and religious development, as well as with political and constitutional progress.



**History e165-166—The recent history of the United States.** Lectures, readings and discussion. Credit II. 3 points each Session. Professor MUZZEY  
11 a. m.—12:40 p. m., Saturday, Room 615 Kent. Fee \$18 each Session

This course will deal with the history of the United States during the last quarter of a century. It will emphasize first of all the problems raised in our political and economic life by the entrance of our country into world-politics. The theories of 'new nationalism' and 'new democracy' will be discussed in their bearing on our inherited institutions and in their implications for our future development.

**History e177—Latin America: people; government; resources.** Credit II, IX. 3 points Winter Session. Professor SHEPHERD  
7:30-9:10 p. m., Monday, Room 615 Kent. Fee \$18

This course, followed by History e178, aims to supply the knowledge and cultivate the attitude of mind which may enable Americans to understand Latin-Americans, appreciate their circumstances, work with them along the lines of material and intellectual progress, and contribute in general to the promotion of inter-American friendship and commerce.

**History e178—Latin America: industry; transportation; commerce.** Credit II, IX. 3 points Spring Session. Professor SHEPHERD  
7:30-9:10 p. m., Monday, Room 615 Kent. Fee \$18  
For description see History e177.

**For courses in the history of the Eastern Question see Russian e103-104, p. 88; Post-Biblical Jewish history, see Semitics e124, p. 89.**

### International Law

*See Also Government, p. 61*

**International law e103-104—Principles and practice of international law.** Lecture-study course. Credit II, IV. 3 points each Session. Mr. MUNRO  
4:30-6:10 p. m., Thursday, Room 614 Kent. Fee \$18 each Session

This course begins with a brief introductory examination of the basic principles of international law relating to war, peace, and neutrality. Application of principles to selected cases. Critical examination of current questions arising in the international relations of the United States and other countries. Especial emphasis is laid upon the practice of arbitration and the possibilities of its wider extension.

Text-book: Stowell and Munro's *International Cases*.

No previous knowledge of international law is required, but the prior study of an elementary text-book, such as Lawrence's *Principles of International Law*, is strongly recommended.

**International law e119-120—Modern European and American diplomacy.** Credit II, IV. 3 points each Session. Mr. MUNRO  
7:40-9:20 p. m., Wednesday, Room 614 Kent. Fee \$18 each Session

Fundamentals of world politics. The European concert and the balance of power. Alliances and ententes. European crises since 1870. International congresses and conferences. The collapse of European diplomacy, 1914. The state papers critically examined.

American diplomacy during the Civil War, especially with respect to problems of neutrality. Foreign relations of the United States, 1865-1898. Anglo-American arbitrations. The diplomacy of the Spanish-American War. The United States as a world power. Canal diplomacy. The United States and the Great War.

**International law e121—History of diplomacy.** Credit II. 3 points Winter Session. Mr. MUNRO  
11-11:50 a. m., Monday and Tuesday, Room 614 Kent. Fee \$18

Evolutions of relations between independent states and manner in which those relations are conducted. History of diplomatic system of Europe from its beginnings to present time, and exposition of preceding religious, dynastic, territorial and commercial struggles. Development of European concert prior to Peace of Westphalia. Examination of most important of general European treaties, beginning with those concluded at Congress of Westphalia, and ending with those of recent date.

**International law e122—History of American diplomacy.** Credit II. 3 points Spring Session. Mr. MUNRO  
11-11:50 a. m., Monday and Tuesday, Room 614 Kent. Fee \$18

Special attention given to history and methods of diplomacy of 'United States: (1) Diplomacy of Revolution; (2) period from Treaty of Peace of 1783 to termination of War of 1812; (3) from the termination of that War to Civil War; (4) from outbreak of that War to present time.

### *International Relations*

**International relations e101-102—History and growth of international relations.** Lecture-study course. Credit II. 3 points each Session. Mr. MUNRO  
7:40-9:20 p. m., Tuesday, Room 614 Kent. Fee \$18 each Session

Introductory—historical: A brief consideration of the history of international relations and earlier forms of internationalism; Roman law; the Christian Church; the Holy Roman Empire; feudalism; the formation of national states.

Study of national policies: *Status quo*; balance of power; concert of Europe; open door; Monroe Doctrine; imperialism.

Problems of international peace: Nationality; race; protection and free trade; armament; proposals for world peace.

World organization: Hague conferences; courts of arbitration; international unions; private international associations; the world's financial organization.

International law and diplomacy: The principles of international law as derived from the practice of independent states are studied from the point of view of fundamental law of the world which constitutes the basis of our international society. Diplomacy is studied as a means to secure the recognition of international law and the protection of national interests and policies.

**Other courses in international law will be open without credit to qualified male students in Extension Teaching on the approval of the Dean of the Law School, and subject to such regulations as may be made by the Faculty of Law.**

### **Journalism**

**Journalism e1—General popular science.** Credit I. 3 points Winter Session. Professor NEISH

4:30-5:45 p. m., Monday and Thursday, Room 413 Havemeyer. Fee \$18

A lecture course on the inorganic sciences, especially chemistry and physics, given in a popular style, liberally illustrated with experiments and specimens from the Chandler Museum. The important elements and their compounds, together with their physical and chemical properties and uses, will form the foundation of the course. American scientific development will be accentuated and typical industrial processes will be treated in a concise manner.

### **LATIN**

**Latin eX1-X2—Elementary Latin and Cæsar.** Credit I in Columbia College; IV. 3 points each Session. Professor GUERNSEY

4:30-6 p. m., Tuesday and Friday, Room 518 Hamilton. Fee \$18 each Session

The aim of this course is to impart knowledge of the elements of Latin and to develop the power to understand and translate Latin of average difficulty with ease and accuracy. To this

end there will be a thorough study of forms, vocabulary, idioms and elementary syntax, together with extensive practice in reading, and constant drill, oral and written, in simple Latin composition.

No previous knowledge of Latin is required.

**Latin eX3—Cæsar, Nepos and prose composition.** Credit I in Columbia College if offered in conjunction with Latin eX1 or eX8; IV. 3 points Winter Session. Miss McCLEES

4:30–6 p. m., Monday and Thursday, Room 410 East. Fee \$18

This course, given in the Winter Session, is planned for students who have studied Latin one year and for those who wish to review the work of the second year of high school.

**Latin eX8—Elementary course.** Credit I in Columbia College if offered in conjunction with Latin eX2 or eX3; IV. 3 points Spring Session Miss McCLEES

4:30–5:45 p. m., Monday and Thursday, Room 410 East. Fee \$18

A course for beginners.

**Latin eY1—Ovid and Vergil.** Credit I in Columbia College;<sup>1</sup> IV. 3 points Winter Session. Miss McCLEES

4:30–6 p. m., Tuesday and Friday, Room 410 East. Fee \$18

**Latin eY3—Cicero and Sallust.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY5 or eY6. 3 points Winter Session. Professor GUERNSEY

4:30–6 p. m., Monday and Thursday, Room 518 Hamilton. Fee \$18

**Latin eY4—Cicero and Sallust.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY5 or eY6. 3 points Spring Session. Professor GUERNSEY

4:30–6 p. m., Monday and Thursday, Room 518 Hamilton. Fee \$18

**Latin eY5—Latin prose composition.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY3 or eY4. 2 points Winter Session. Miss WYE

2:10–3 p. m., Tuesday and Thursday, Room 610 Journalism. Fee \$12

This course is designed to give a thorough review of the material which is ordinarily included in the high school course in prose composition.

Prerequisite: Latin eX1–X2 or the equivalent.

**Latin eY6—Latin prose composition.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY3 or eY4. 2 points Spring Session.

2:10–3 p. m., Tuesday and Thursday. Room 610 Journalism. Fee \$12. Miss WYE

Latin eY5 repeated in the Spring Session.

**Latin eY8—Ovid and Vergil.** Credit I in Columbia College;<sup>1</sup> IV. 3 points Spring Session. Professor MOORE

4:30–6 p. m., Tuesday and Friday, Room 507 Hamilton. Fee \$18

An introduction to Latin poetry and hexameter verse.

Latin eY1 repeated in the Spring Session.

<sup>1</sup> To secure this credit all three courses, Latin eY1 or eY8, eY3 or eY4, and eY5 or eY6, or their equivalents in the Summer Session, must be offered.



**Extension students who are qualified will also be admitted to the following courses:**

**Latin 201-202—Latin literature of the Republic.** 3 points each Session. Professor N. G. MCCREA

10 a. m.—12 m., Saturday, Room 706 Philosophy. Fee \$18 each Session

Lectures, readings and discussions, with an essay in each half-year. This course will be so conducted that it may be taken by those also who cannot read Latin.

The classroom work will be chiefly concerned with the following authors: Ennius, Plautus, Terence, Lucretius, Catullus, Cicero, Cæsar, Sallust. They will be discussed, partly as reflecting the Roman outlook upon life, partly in their relation to modern literature and thought.

Those who expect to take this course will find it helpful to read in advance, if possible, portions of the authors mentioned above. A list of the readings, including translations into English, may be had upon application to the instructor.

**Latin 151—Roman epigraphy.** Introduction to the study of Latin inscriptions. 3 points Winter Session. Professor EGBERT

4:10-6 p. m., Thursday, Room 713 Philosophy. Fee \$18

Lectures, discussions, and outside work consisting of the reading of printed inscriptions, the study of original inscriptions, and the preparation of papers upon special topics.

**Latin 152—Roman epigraphy.** Official and sepulchral inscriptions. 3 points Spring Session. Professor EGBERT

4:10-6 p. m., Thursday, Room 713 Philosophy. Fee \$18

Prerequisite: Latin 151 or its equivalent.

The general plan and scope of the work will be the same as in Latin 151.

## LAW

**Courses in law in general will be open without credit to qualified male students in Extension Teaching on the approval of the Dean of the Law School, and subject to such regulations as may be made by the Faculty of Law.**

**Law eX1-X2—Nature and functions of law.** Credit I, IV. 2 points each Session. Mrs. MABEL WITTE MERRITT

4:30-6:10 p. m., Monday, Room 614 Kent. Fee \$12 each Session

The object of this course is to acquaint students with the history and nature of legal conceptions and terms. It is not intended for law students but for persons, especially women, who desire a knowledge of legal questions for practical purposes and for general culture.

The course will include, in the Winter Session, the general principles of contracts, agency, personal property, corporations, master and servant, domestic relations; in the Spring Session, real property, deeds, mortgages, dower, wills and the administration of estates.

Leading cases will be studied and papers written upon topics of individual interest. Documents such as contracts, bills and notes, deeds, bonds, mortgages, and wills will be analyzed in class.

**Law eX3—Legal practice.** 2 points Winter Session. Mr. MEDINA

8-9:30 p. m., Monday, Room 614 Kent. Fee \$12

This course is offered primarily for students who have completed their law course and are beginning the active practice of their profession. The aim of the course is to aid the student who has received thorough training in legal theory to study its application in practice more systematically than is possible in the modern law office. It will deal with the practical problems of law office organization, the conduct of litigation, the drawing of legal documents, etc., etc.

## LIBRARY ECONOMY

The courses in library economy when supplemented by certain cultural classes form a full year's work. On the completion of the work a formal statement is given to students who have

satisfied the entrance requirements. Full information is contained in a special bulletin which will be mailed upon request.

All courses in library economy are under the direction of Miss HELEN REX KELLER with whom students should consult about arranging their programs. Her office hours are 11:30 a. m.-12 m., Monday, Wednesday and Friday in Room 301 University Hall.

**Library economy e1-2—Bibliography.** 2 points each Session. Miss H. R. KELLER

10-10:50 a. m., Friday, Room 610 Journalism. Fee \$12 each Session

A study by means of lectures and problems of the standard works of bibliography and reference. General and national bibliography, American, English, French and German. Reference works, *i. e.*, encyclopedias and dictionaries, general and special, indexes to periodicals, and government documents, statistical annuals, quotations, handbooks of information, etc. The history of the book, bibliographies of special subjects, the best books, manuals, etc., will be given by professors of the University.

Text-book: A. B. Kroeger, *Guide to the Study and Use of Reference Books*.

**Library economy e3-4—Cataloguing and classification.** 2 points each Session. Miss H. R. KELLER

9:15 a. m.-12:15 p. m., Tuesday and Thursday, Room 401 Library. Fee \$12 each Session

Lectures and practice work based on the A. L. A. catalogue rules; A. L. A. list of subject headings for use in dictionary catalogues, fourth edition; *Rules for a Dictionary Catalogue*, fourth edition, by C. A. Cutter, and the *Decimal Classification* by Melvil Dewey.

Winter Session, cataloguing; Spring Session, cataloguing and classification.

**Library economy e5—Library administration.** 2 points Winter Session. Mr. HICKS

9-9:50 a. m., Wednesday, Room 609 Journalism. Fee \$12

The course of the book from the publisher through the departments of the library to the reader will be followed in detail of process and record as follows: Book selection and book buying, American publishers, the book order department, its staff, checking of invoices and order files, accessioning; the catalogue department of the large and the small library; book binding and rebinding; charging systems; library statistics; the library budget; the librarian's report; library advertising.

Required reading will be mainly in the files of the Library Journal and Public Libraries.

**Library economy e6—Library administration.** Seminar. 2 points Spring Session. Miss H. R. KELLER

10-10:50 a. m., Wednesday, Room 610 Journalism. Fee \$12

Individual topics will be presented by the students. Lectures by librarians and visits to libraries. Monday mornings are reserved for visits to libraries. Practice work will be arranged for students who have successfully completed e5.

**Library economy e7—Children's work.** 1 point Winter Session. Mrs. GOULD

10-10:50 a. m., Saturday, Room 707 Journalism. Fee \$6

This course will take up the planning and equipment, organization and administration of the children's room; reading circles and clubs; cooperation with the school, home, playground, etc.; book selection, buying of books, simple cataloguing and classification as adapted to children's books.

**Library economy e8—Children's literature and story-telling.** 1 point Spring Session. Mrs. GOULD

10-10:50 a. m., Saturday, Room 707 Journalism. Fee \$6

A study of books for the child and the older boy and girl. The child's library: Picture books, fairy tales, poetry, ballads, romances and hero tales. Children's classics in fiction and non-fiction. Illustrated editions of books. Story-telling: How to tell stories; what to tell. The story hour for the group in the library, the school, the settlement and the home.

**Library economy e21—Indexing, filing and cataloguing as applied in business.** 2 points Winter Session. Fee \$12. Miss H. R. KELLER

Section 1—7:45-9:45 p. m., Wednesday, Room 401 Library

Section 2—9-11 a. m., Saturday, Room 401 Library

Lectures and practice. A course in indexing and filing correspondence, clippings, pamphlets, etc. The application of library methods, card and classification systems, especially the Dewey Decimal system, to records in business offices and special libraries, commercial houses, banks and corporations. Talks by business librarians about their work will be a feature of this course.

**Library economy e22—Indexing, filing and cataloguing as applied in business.** 2 points Spring Session. Fee \$12. Miss H. R. KELLER

Section 1—7:45-9:45 p. m., Wednesday, Room 401 Library

Section 2—9-11 a. m., Saturday, Room 401 Library

## MATHEMATICS

**Mathematics eX1—Algebra, elementary and intermediate course** (complete). 4 points Winter Session. Dr. HOLLCROFT

6:10-7 p. m., Monday, Tuesday, Thursday and Friday, Room 214 Hamilton. Fee \$24

This course reviews elementary algebra to and beyond quadratics. It includes the fundamental operations, factoring, fractions, ratio and proportion, quadratics, binomial theorem (simple forms), progressions and graphical methods. *It is not open to beginners.*

**Mathematics eX2—Algebra, elementary and intermediate course** (complete). 4 points Spring Session. Dr. RITT

7:25-8:15 p. m., Monday, Tuesday, Thursday and Friday, Room 214 Hamilton. Fee \$24

Course eX1 repeated in the Spring Session.

**Mathematics eX3—Algebra, elementary course.** 3 points Winter Session. Mr. BIRD

7-8:15 p. m., Monday and Thursday, Room 203 Hamilton. Fee \$18

This course, planned for beginners, covers elementary algebra to quadratics.

**Mathematics eX4—Algebra, elementary course.** 3 points Spring Session. Mr. BIRD

8:20-9:35 p. m., Monday and Thursday, Room 203 Hamilton. Fee \$18

Mathematics eX3 repeated in the Spring Session.

**Mathematics eX5—Algebra, intermediate course.** 3 points Winter Session. Mr. BIRD

8:20-9:35 p. m., Monday and Thursday, Room 203 Hamilton. Fee \$18

This course is planned especially for students who have had a course in elementary algebra to quadratics. The work will begin with a brief review of the more important topics of elementary algebra and proceed to the study of quadratic equations, the binomial theorem and the progressions.



**Mathematics eX6—Algebra, intermediate course.** 3 points Spring Session. Dr. HOLLCROFT

7-8:15 p. m., Monday and Thursday, Room 203 Hamilton. Fee \$18

Mathematics eX5 repeated in the Spring Session.

**Mathematics eY1—Plane geometry** (complete). 4 points Winter Session. Dr. HOLLCROFT

7:25-8:15 p. m., Monday, Tuesday, Thursday and Friday, Room 214 Hamilton. Fee \$24

The five books of plane geometry, including rectilinear figures, the circle, proportion areas of polygons, regular polygons and circles.

Text-book: Wentworth's *Geometry* (Wentworth and Smith's revision).

**Mathematics eY2—Plane geometry.** 4 points Spring Session. Dr. RITT  
6:10-7 p. m., Monday, Tuesday, Thursday and Friday, Room 214 Hamilton. Fee \$24

Mathematics eY1 repeated in the Spring Session.

**Mathematics eA1—Trigonometry.** Credit I, IV. 2 points Winter Session. Fee \$12

Section 1—4:10-5 p. m., Tuesday and Friday, Room 214 Hamilton. Mr. SWENSON

Section 2—8:20-9:10 p. m., Monday and Thursday, Room 214 Hamilton. Mr. POST

The subject matter of this course includes trigonometric functions, circular measure, relations between the functions, functions of several angles, inverse functions, trigonometric equations, logarithms, solution of triangles.

Mathematics eX5 or its equivalent is presupposed.

Text-book: Palmer and Leigh's *Plane Trigonometry*.

**Mathematics eA2—Solid geometry.** Credit I, IV. 3 points Spring Session. Mr. SWENSON

7-8:15 p. m., Tuesday and Friday, Room 203 Hamilton. Fee \$18

Mathematics eA3 repeated in the Spring Session.

**Mathematics eA3—Solid geometry.** Credit I, IV. 3 points Winter Session. Mr. POST

4:30-5:45 p. m., Monday and Thursday, Room 203 Hamilton. Fee \$18

In addition to the usual theorems on lines, planes and solids, the geometry of the sphere, and the development of space intuition, this course lays special stress upon the purely logical side of the subject and the nature of mathematical proof.

Plane geometry is presupposed.

The above course is equivalent to Mathematics A2 or A3 in the *Announcement of Columbia College*.

Text-book: Hart and Well's *Solid Geometry*.

**Mathematics eA4—Trigonometry.** Credit I, IV. 2 points Spring Session. Dr. HOLLCROFT

8:20-9:10 p. m., Monday and Thursday, Room 214 Hamilton. Fee \$12

Mathematics eA1 repeated in the Spring Session.

**Mathematics e1—Algebra.** Credit I, IV. 3 points Winter Session. Mr. POST  
7-8:15 p. m., Monday and Thursday, Room 203 Hamilton. Fee \$18

This course is designed for students who desire to continue with such more advanced topics as permutations and combinations, determinants with applications to the solutions of linear equations, complex numbers, theory of equations, with reference to the solution of numerical equations of higher degree, undetermined coefficients involving the use of finite series, and partial fractions.

Mathematics eA1 or its equivalent is presupposed.

Equivalent to Mathematics 1 in the *Announcement of Columbia College*.

Text-book: Hawkes' *Higher Algebra*.

**Mathematics e2—Algebra.** Credit I, IV. 3 points Spring Session. Dr. FISCHER  
7-8:15 p. m., Monday and Thursday, Room 202 Hamilton. Fee \$18

Mathematics e1 repeated in the Spring Session.

**Mathematics e3—Analytical geometry.** Credit I, IV. 3 points Winter Session. Dr. FISCHER

7-8:15 p. m., Monday and Thursday, Room 202 Hamilton. Fee \$18

Introduction to algebraic geometry, dealing with such topics as coordinate systems, transformations, loci and their equations, the straight line, circle, parabola, ellipse, hyperbola, the geometric interpretation of the general equation of second degree and the elements of three-dimensional geometry.

Mathematics eA1 and e1 or their equivalents are presupposed.

Equivalent to Mathematics 3 or 4 in the *Announcement of Columbia College*.

Text-book: Smith and Gale's *New Analytic Geometry*.

**Mathematics e4—Analytical geometry.** Credit I, IV. 3 points Spring Session. Mr. BIRD

7-8:15 p. m., Monday and Thursday, Room 406 Hamilton. Fee \$18

Mathematics e3 repeated in the Spring Session.

**Mathematics e55-56—Calculus.** Credit I, IV. 3 points each Session. Dr. MULLINS

7-8:15 p. m., Tuesday and Friday, Room 202 Hamilton. Fee \$18 each Session

The notions and operations of function, differentiation, and integration are presented with application to geometry, physics and mechanics.

Mathematics e3 or its equivalent is presupposed.

Equivalent to Mathematics 75-76 in the *Announcement of Columbia College*.

Text-book: Granville's *Differential and Integral Calculus*.

**Mathematics e58—Calculus.** Credit I, IV. 3 points Spring Session. Dr. HOLLCROFT

8:20-9:35 p. m., Tuesday and Friday, Room 202 Hamilton. Fee \$18

Mathematics e75 repeated in the Spring Session.

## MUSIC

**Music eX1-X2—University Chorus.** Professor WALTER HENRY HALL

8:15-9:45 p. m., Tuesday. Room 206 Journalism. Fee for University students expecting credit, \$6 for the year, otherwise no charge excepting for music used. Credit I. 1 point for the year with special arrangement, if taken in conjunction with another course in music.

For the practice and performance of choral music in the larger forms. It is expected that concerts will be given during the year, when the University Chorus will join with that of Brooklyn (Brooklyn Oratorio Society), forming a large festival chorus. The chorus is open

to others besides students of the University. Membership is obtained only after application to Professor HALL for voice trial.

**Music eY1-Y2—University Choir.** Professor WALTER HENRY HALL

8-9:30 p. m., Thursday, Room 701 Journalism

Membership is composed of specially qualified students as well as a limited number of professional and other singers not affiliated with the University. Men, women and boys are eligible. The choir sings at the Sunday afternoon Chapel services, and will illustrate special lectures on choral music.

**Music e5—Elementary ear training and dictation.** Credit IV. 2 points  
Winter Session. Mr. MANNING

11-12:40 a. m., Saturday, Room 701 Journalism. Fee \$12

This course aims to develop the rhythmic sense, the recognition of tones, intervals and chords and the ability to hear mentally the melodies and rhythms that one sees on the printed page and to write, from dictation, music in one and two parts.

An elementary knowledge of notation is required.

**Music e5a—Advanced ear training and dictation.** Credit IV. 2 points  
Winter Session. Mr. MANNING

9-10:40 a. m., Saturday, Room 701 Journalism. Fee \$12

Identical with Music e6a, but given in the Winter Session.

**Music e6—Elementary ear training and dictation.** Credit IV. 2 points  
Spring Session. Mr. MANNING

11-12:40 a. m., Saturday, Room 701 Journalism. Fee \$12

Identical with Music e5 but given in the Spring Session.

**Music e6a—Advanced ear training and dictation.** Credit IV. 2 points  
Spring Session. Mr. MANNING

9-10:40 a. m., Saturday, Room 701 Journalism. Fee \$12

This course continues Music e5, developing oral recognition of chords as used in diatonic and chromatic harmony, modulations and the various non-harmonic devices; with written dictation in two to four parts.

A theoretic knowledge of harmony is required.

**Music e7-8—Elementary harmony.** Credit I, IV. 2 points each Session.  
Mr. WARD

4:10-5:50 p. m., Monday, Room 701 Journalism. Fee \$12 each Session

This course treats of the fundamental principles of melody writing, chord-construction and chord interrelation through the medium of four-part writing. It will include the study of triads, seventh and ninth chords and their inversions, suspensions and other non-harmonic devices and simple modulation and will involve the harmonizing of given basses and melodies. A knowledge of notation and ability to play simple exercises on the piano are required for admission.

**Music e7a—Elementary harmony.** Credit I, IV. 2 points Winter Session.  
Mr. WARD

1:10-2:50 p. m., Saturday, Room 701 Journalism. Fee \$12

This course is identical with Music e8 and is planned for students who have had some instruction in elementary harmony.

**Music e8a—Elementary harmony.** Credit I, IV. 2 points Spring Session.  
Mr. WARD

1:10-2:50 p. m., Saturday, Room 701 Journalism. Fee \$12

This course, beginning in February, is the same as Music e7 and is planned for students who desire to study the fundamental principles of harmony.



**Music e9-10—Advanced harmony and elementary form.** Credit I, IV. 2 points each Session. Mr. WARD

4:10-5:50 p. m., Saturday, Room 701 Journalism. Fee \$12 each Session

A continuation of Course e7-8, taking up the various methods of modulation, altered chords organ point, etc. Analysis of works by the great composers, and the study of the smaller forms, leading to original composition, constitute an important part of the work of this course.

Applicants should consult the instructor before registering.

**Music e53-54—Introductory harmony.** Credit I, IV. 2 points each Session. Mr. KRAFT

11 a. m.-12:40 p. m., Saturday, Room 610 Journalism. Fee \$12 each Session

The aim of this course is: first, to lead the student to observe the structure of hymn-tunes, chorals and simple compositions, with reference to the melodic movement of parts and to the character and distribution of chords; second, to give practice in melodic invention and chord combinations expressed in simple constructive work. This work can be adapted to high schools.

**Music e55-56—Sight singing.** Credit IV. 2 points each Session. Mr. KRAFT  
9-10:40 a. m., Saturday, Room 610 Journalism. Fee \$12 each Session

This course is especially arranged for grade teachers. The work is planned to give material and the method of teaching it from the first grade through the eighth. Ear training and dictation form an important factor of the work.

### Neurology

**Neurology e223-224—Neuro-anatomy.** The anatomy, histology, development and architectonics of the nervous system of man. Followed by a comparative study of the nervous system of the vertebrates. Lectures, demonstrations, conferences, and laboratory work. Credit II, VI. 3 points each Session. Professor TILNEY, Messrs. ELWYN and DEFREM

7:10 p. m., Friday. Neurologic Laboratory, College of Physicians and Surgeons, 437 West 59th Street. Fee \$18 each Session

This course is intended primarily for physicians, psychologists, and advanced students in medicine and zoology. The essentials of the structure of the nervous system will be presented, with special reference to the interpretation of the integrative action and functional control vested in the brain and spinal cord. The aim will be to supply an adequate morphologic basis to those concerned mainly with its function and its organic disturbances.

### OPTICS AND OPTOMETRY

The University offers a two years' course in optics and optometry for students of optometry. A special circular describing these classes will be sent on application to the Secretary of the University.

### ORAL HYGIENE (Dental Hygiene)

The University offers a one-year's course in Oral Hygiene (Dental Hygiene) to women students who desire to be trained to be dental hygienists. A special circular describing these courses will be sent on application to the Secretary of the University.

### PHILOSOPHY

**Philosophy eA1—Principles of science; methods, deductive and inductive logic.** Lectures, recitations, and individual consultations with the instructor. Credit I, IV. 3 points Winter Session. Dr. SCHNEIDER

8:20-9:35 p. m., Tuesday and Friday, Room 503 Hamilton. Fee \$18

This course aims at drilling students in the forms of accurate thinking and at developing skill in detecting errors in reasoning. The principles of inductive and deductive logic will be taught and applied, both critically and constructively, to a large number of arguments.

Text-books: Dewey's *How We Think* and Jevons' *Studies in Deductive Logic*.

This course is the same as Philosophy A1 in Columbia College.

**Philosophy eA2—Principles of science: concepts and problems of philosophy.** Lectures, recitations, and individual consultations with the instructor. Credit I, IV. 3 points Spring Session. Professor COSS or Mr. MUNROE

8:20-9:35 p. m., Tuesday and Friday, Room 503 Hamilton. Fee \$18

In this course the scientific knowledge of the present day will be used as a basis of interpreting and criticizing fundamental philosophic conceptions of human nature and man's place in the universe.

This course is the same as Philosophy A2 in Columbia College.

**Philosophy eA4—Principles of science: methods, deductive and inductive logic.** Credit I, IV. 3 points Spring Session. Dr. SCHNEIDER

4:30-5:45 p. m., Tuesday and Friday, Room 503 Hamilton. Fee \$18

Course eA1 repeated in the Spring Session for students entering at that time. For description see above.

**Philosophy eA5—Principles of science: concepts and problems of philosophy.** Credit I, IV. 3 points Winter Session. Professor COSS or Mr. MUNROE

4:30-5:45 p. m., Tuesday and Friday, Room 503 Hamilton. Fee \$18

Course eA2 given in the Winter Session. For description see above.

**Philosophy e21—Ethics, theoretical and practical.** Credit I, IV. 2 points Winter Session. Professor PARKER

4:30-6:10 p. m., Wednesday, Room 403 Avery. Fee \$12

An inquiry into the true principles of conduct, based upon McDougal's *Social Psychology* and Dewey and Tuft's *Ethics* with applications to present-day issues.

**Philosophy e22—Ethical ideals, past and present.** Credit I, IV. 2 points Spring Session. Professor PARKER

4:30-6:10 p. m., Wednesday, Room 403 Avery. Fee \$12

An historical and critical survey of the ends of life which men have actually put before them as revealed in the literatures, religions, and civilizations of the world.

**Philosophy e135-136—Radical, conservative, and reactionary tendencies in present-day morals.** Credit II. 3 points each Session. Professor MONTAGUE

7:40-9:30 p. m., Friday, Room 507 Hamilton. Fee \$18 each Session

The course is designed as an introduction to contemporary problems of social or institutional ethics. These problems arise in connection with the conflicting theories as to the true nature and value of the established institutions of human society. The work of the course will, therefore, consist in a general survey of these six fundamental institutions or forms of social relationship, and of the problems and controversies related to each of them. The order of study will be as follows:

1. The political problem of the powers of the state (anarchism *vs.* governmentalism).
2. The international problem of the federation of the world (pacifism *vs.* militarism).
3. The industrial problem of the status of property (socialism *vs.* laissez-faire).
4. The educational problem of the purpose of the school (vocationalism *vs.* general culture).
5. The woman problem of the organization of the family (feminism *vs.* the claim of the home).
6. The religious problem of the ideal of the church (anti-clericalism *vs.* christianity).

**Philosophy e141—General esthetics.** Credit I, II. 2 points Winter Session.

Dr. PARKHURST

7:40–9:30 p. m., Tuesday, Room 511 Hamilton. Fee \$12

The course will aim to define beauty as manifested in certain of the arts and to describe the characteristic experience of the beautiful and of other esthetic values such as the tragic, the sublime, etc. Possible classifications of the arts will be suggested and canons of taste established. Some of the connections will be traced between art proper and such things as magic, mysticism, and ritual, thereby calling attention to the esthetic element in the more important varieties of emotional experience. Some of the traditional problems of esthetic theory will be considered—notably that of the antithesis between imitation of nature and expression of the ideal. Finally, the formal aspect of art will be analyzed, with special emphasis upon the principles of repetition, rhythm, and symmetry as operative, for example, in the structure of poetry, architecture, sculpture, and painting.

**Philosophy e161–162—History of philosophy.** Credit I, IV. 2 points; Credit II, 3 points each Session. Professor PARKER

4:30–6:10 p. m., Friday, Room 403 Avery. Fee \$12 or \$18 each Session

In the Winter Session the genesis of the fundamental problems of thought, ethics and religion and the treatment they received from ancient and medieval thinkers will be traced. The Spring Session will be devoted to the consideration of these problems from the point of view of the modern world.

Text-books: Weber's *History of Philosophy*; Windelband's *Ancient Philosophy*.

**Extension students who are qualified will also be admitted to the following course:**

**Philosophy 21–22—Ethics.** 3 points each Session. Fee \$18 each Session. Professor LORD

Columbia College. 11 a. m., Monday, Wednesday and Friday, Room 511 Hamilton

Barnard College. 1:10 p. m., Monday, Wednesday and Friday, Barnard College

**PHONETICS****Phonetics e101–102—Phonetics and pronunciation.** 3 points each Session. Mr. TILLY

4:30–6:10 p. m., Friday, Room 512 Journalism. Fee \$18 each Session

English pronunciation will be the chief subject; French, German and Spanish sounds will be treated incidentally. This elementary course will be the foundation for advanced courses in English, French, German, and Spanish. The course will be suitable for teachers and students of modern languages, oral English, elocution and singing; also for those whose business it is to correct speech defects or to train foreigners in an accurate pronunciation of English. An elementary practical knowledge of phonetics is recognized by modern linguists as the indispensable basis of all language study, whether theoretical or practical. The method of transcription employed will be of the International Phonetic Association.

**Phonetics e103–104—Intermediate course.** 3 points each Session. Mr. TILLY

4:30–6:10 p. m., Monday, Room 512 Journalism. Fee \$18 each Session

English pronunciation will continue to be the chief subject. Course only open to students who have had Phonetics e101–102 or equivalent instruction in this subject.

**Phonetics e105–106—Advanced course.** 3 points each Session. Mr. TILLY

4:30–6:10 p. m., Tuesday, Room 512 Journalism. Fee \$18 each Session

English pronunciation will continue to be the chief subject. Course only open to students who have had Phonetics e103–104 or equivalent instruction in this subject.



**Phonetics e107-108—Comparative phonetics. Intermediate course.** 3 points each Session. Mr. TILLY

4:30-6:10 p. m., Wednesday, Room 512 Journalism. Fee \$18 each Session

A specialized course in phonetics planned to be of practical use to teachers of modern languages. All the fundamental sounds of French, Spanish and German will be carefully studied, and the practical difficulties met by teachers of these languages will be carefully considered. This course is open only to students who have had Phonetics e102, or equivalent instruction in this subject.

All foreign texts will be translated, so that students without previous knowledge of the languages can follow. These simple texts will serve as an introduction to the study of the languages on a phonetic basis. Open only to students who have had Phonetics e101-102.

**Phonetics e109-110—Comparative phonetics. Advanced course.** 3 points each Session. Mr. TILLY

4:30-6:10 p. m., Thursday, Room 512 Journalism. Fee \$18 each Session

An advanced study of the phonetics of French, Spanish, Italian and German. Open only to students who have had Phonetics e107-108.

## PHOTOGRAPHY

**Photography e1—General principles of photography.** Lectures. 2 points Winter Session. Dr. WEINRICH

7:40-9:30 p. m., Friday, Room 304 Fayerweather. Fee \$12

This course is designed to give the student a sound fundamental knowledge of the theory and practice of photography. It comprises: Introductory lectures on light; the pin-hole camera; a general discussion of lenses; the errors, corrections and properties of photographic lenses; the advantages and disadvantages of different types of lenses and shutters; the testing of lenses and shutters; the adjustments and accessories of different types of cameras and their use; the exposure and exposuremeters; the photographic emulsion in general; the theories of the latent image; an elementary treatment of orthochromatism in conjunction with various processes of color photography; the normal and abnormal development of normal and abnormal exposures and the general treatment of dry-plates and films and a discussion of the more important photographic printing processes.

Whenever practicable, the lectures will be illustrated by lantern slides and experiments.

This course will not be given for less than eight students.

## PHOTOPLAY COMPOSITION

**Photoplay composition e1—Elementary course.** 3 points Winter Session. Fee \$18. Mrs. FRANCES T. PATTERSON

Section 1—3:10-4:25 p. m., Tuesday, Room 201 East

Section 2—7:10-8:25 p. m., Wednesday, Room 201 East

This course deals in general with the composition of cinematic plot as contrasted with dramatic and narrative plot. It takes up the main problems of presenting a story impressively through the medium of pictures alone. Special attention is paid to the principles of visual appeal, the effective use of motion picture devices, the art of arousing and sustaining the spectator's interest, the creating of situations and crises, and the logic of emotionally satisfactory endings. Scenarios and detailed synopses are prepared according to the current usage in the studios. Films are exhibited and analyzed before the class.

Each student is required to write scenarios of at least one adaptation and one original photoplay.

**Photoplay composition e2—Elementary course.** 3 points Spring Session.

Fee \$18. Mrs. FRANCES T. PATTERSON

Section 1—3:10-4:25 p. m., Tuesday, Room 201 East

Section 2—7:10-8:25 p. m., Wednesday, Room 201 East

Identical with Photoplay composition e1, but offered in the Spring Session.

**Photoplay composition e3—Intermediate course.** 3 points Winter Session. Fee \$18. Mrs. FRANCES T. PATTERSON

Section 1—3:10-4:25 p. m., Thursday, Room 201 East

Section 2—8:30-9:45 p. m., Wednesday, Room 201 East

This course deals specifically with the finer problems of the photoplay as an art. There is discussion of such topics as the psychology of cinema characters, symbolism, allegory, the spectator's imagination, dramatizing natural setting, pictorial composition, and the progression of pictures.

Each student is expected to complete the scenario of an original five-reel photoplay, or to produce other original work of equivalent value.

Prerequisite or parallel: Photoplay composition e1 or e2 or s2.

**Photoplay composition e4—Intermediate course.** 3 points Spring Session.

Fee \$18. Mrs. FRANCES T. PATTERSON

Section 1—3:10-4:25 p. m., Thursday, Room 201 East

Section 2—8:30-9:45 p. m., Wednesday, Room 201 East

Identical with Photoplay composition e3, but offered in the Spring Session.

**Photoplay composition e5-6—Advanced course.** 4 points each Session.

Mrs. FRANCES T. PATTERSON

4:45-6 p. m., Monday, Room 201 East. Fee \$24 each Session

This course is open only to those who have completed successfully the work in the intermediate course. The class is limited to ten students. For description of the work done consult the instructor.

**PHYSICAL EDUCATION**

*(For men students only)*

**Physical education eA1-A2—Gymnastics and games.** Credit I, IV. 2 points each Session. Professor ELLIOTT

8:30-9:20 p. m., Monday, Wednesday and Thursday, University Gymnasium.

Fee \$12 each Session

This course comprises free exercises with and without hand apparatus and chest-weight exercises; simple work on gymnastic apparatus, such as horizontal ladder, horizontal bar ropes, buck, horse, etc., gymnasium games.

Students taking this course for credit in Columbia College will be required to attend one hour a week (Wednesday, 7:30-8:20 p. m., or Monday and Thursday, 5-6:15 p. m.) a course in hygiene and sanitation during the Winter Session and to pass an examination in swimming during the Spring Session.

**Physical education eW1-W2—Wrestling.** 2 points each Session. Fee \$12 each Session. Mr. PETERSON

Section 1—7:30-8:30 p. m., Thursday, University Gymnasium

Section 2—8:30-9:30 p. m., Thursday, University Gymnasium

**Physical education eY1-Y2—Swimming.** 2 points each Session. Fee \$12 each Session.

Section 1—Monday, 8:30-9 or 9-9:30 p. m., University Gymnasium

Section 2—Thursday, 8:30-9 or 9-9:30 p. m., University Gymnasium

Section 3—Saturday, 8:30-9 or 9-9:30 p. m., University Gymnasium

Students may receive instruction on either Monday, Wednesday, or Thursday, and will have the privilege of using the swimming pool on the remaining evenings.

**Physical education eZ1-Z2—Boxing.** 2 points each Session. Fee \$12 each Session. Mr. WEEMAN

Section 1—Thursday, 7:30–8:30 p. m., University Gymnasium

Section 2—Thursday, 8:30–9:30 p. m., University Gymnasium

Students have the privilege of using the gymnasium and swimming pool Monday, Thursday, and Saturday evenings from 7 to 10 o'clock.

## PHYSICS

**Physics eA1-A2—Elementary course in general physics.** 3 hours' lectures and recitations, with 2 hours' laboratory work a week. Credit I, IV. 4 points each Session. Fee \$24 each Session. Dr. MORSE and Mr. STEMPER

7:30–9 p. m., Monday and Thursday, lectures, Room 304 Fayerweather. The laboratory work is done in sections of 12 students each, the number of sections and the hours of meeting depending upon the number registering for the course. In 1917–1918 the sections met as follows:

Section 1—Monday, 5:30–7:30 p. m.

Section 2—Monday, 9–11 p. m.

Section 5—Thursday, 5:30–7:30 p. m.

Section 6—Thursday, 9–11 p. m.

In assigning students to laboratory sections, preference will be given to those who register first.

An introductory course in physics for students who wish to become acquainted with the results, methods and spirit of the science, whether they intend to pursue its study further or wish an elementary knowledge of physics only as a matter of general interest. A knowledge of elementary algebra and geometry is required. Trigonometry is not required.

## POLITICS

(See Government, p. 61)

## PSYCHOLOGY

**Psychology e1-2—Elements of psychology.** Lectures, demonstrations, discussions and recitations. Credit I, IV. 3 points each Session. Fee \$18 each Session. Dr. GATES

Section 1—4:30–5:45 p. m., Tuesday and Friday, Room 516 Schermerhorn

Section 2—7–8:15 p. m., Tuesday and Friday, Room 407 Schermerhorn

This course is designed to give the student a knowledge of the essential facts and fundamental laws of psychology. It serves as an introduction to the more advanced courses in psychology and philosophy, and also meets the requirements of boards of education for a course in general or pure psychology. The first part of the course deals with the nervous system and sensation, the second part with the higher mental processes.

**Psychology e5-6—Psychology for nurses and social workers.** Lectures and discussions. Credit IV. 2 points each Session. Miss MURDOCK

8–9:40 p. m., Tuesday, Room 407a Schermerhorn. Fee \$12 each Session

This course gives briefly the fundamental principles of psychology, stressing constantly their application in social situations arising in the practice of nursing and other forms of community service. Instinct, habit, individual differences, and the influence of heredity and environment will receive special consideration.



**Psychology e131-132—Mental hygiene.** Credit II. 3 points each Session.

Dr. LAMBERT

5-6:40 p. m., Monday, Room 407a Schermerhorn. Fee \$18 each Session

The causes, treatment, prevention and social significance of mental defects and disorders will be considered in a way to appeal specially to the social worker. Institutions will be visited, and an evening a month devoted to conferences and special lectures.

**Psychology e145-146—Applications of psychology.** Lectures, demonstrations and discussions. Credit II. 3 points each Session. Either Session may be taken separately. Professor HOLLINGWORTH

4:10-5:50 p. m., Wednesday, Room 407 Schermerhorn. Fee \$18 each Session

The attitude, principles and methods of modern psychology will be applied to such fields as vocational guidance, selection of employees, management, industrial motion-study, advertising and selling, law, social work, medicine, criminology, eugenics, education, and the diagnosis and treatment of mental abnormality.

**Psychology e165—Social psychology.** Credit II. 3 points Winter Session.

Professor WOODWORTH

7-8:40 p. m., Friday, Room 407a Schermerhorn. Fee \$18

Prerequisite: Psychology e1-2 or an equivalent.

**Psychology e168—Psychology in the national service.** Credit II. 3 points Spring Session. Professor WOODWORTH

7-8:40 p. m., Friday, Room 407a Schermerhorn. Fee \$18

Applications of psychology in testing for military fitness and in re-education of the disabled.

**Business e117-118—Psychology of advertising and selling.** Credit II, IX. 3 points each Session. Professor HOLLINGWORTH

7:40-9:20 p. m., Monday, Room 407 Schermerhorn. Fee \$18 each Session

For description see p. 34.

**Extension students who are qualified will also be admitted to the following course:**

**Psychology 111-112—Survey of modern psychology.** 3 points each Session.

Professor WOODWORTH

10 a. m., Monday, Wednesday, and Friday, Room 407 Schermerhorn. Fee \$18 each Session

This course aims to cover the field, with special emphasis on the experimental and physiological sides of the subject, and with some attention also to genetic, abnormal and social psychology.

**PUBLIC HEALTH (See Sociology e110, p. 90)**

## ROMANCE LANGUAGES

All the courses in Romance Languages in Extension Teaching are under the general supervision of Professor GERIG; office hours, 4:15 p. m., Tuesday and Friday, Room 506 Philosophy. Students seeking special or urgent consultation or advice may call upon Professor FORTIER for French (office hours, Monday, Tuesday, Thursday, and Friday, 4-4:30 p. m., Room 308 Hamilton Hall), and Mr. IMBERT for Spanish (office hours 4:30-5 p. m., Monday and Thursday, Room 508 Hamilton Hall).

### *French*

**French eA1-A2—Elementary course.** Credit I, IV. 4 points each Session.

Fee \$24 each Session

Section I—4:30-5:55 p. m., Tuesday, Wednesday and Friday, Room 311 Have-meyer. Dr. ALEXANDER

Section 2—8:30-9:55 p. m., Monday, Wednesday and Thursday, Room 303 Hamilton. Mr. FERARU

Section 3—3-4:25 p. m., Tuesday, Wednesday and Friday, Room 311 Have-meyer. Dr. LEDUC

*College sections 4 and 5 limited to men matriculated in Columbia College.*

Section 4—11-11:50 a. m., Monday, Tuesday, Wednesday, Thursday and Friday, Room 408 Hamilton. Mr. PERRIER

Section 5—1:10-2 p. m., Monday, Tuesday, Wednesday, Thursday and Friday, Room 309 Hamilton. Mr. WILKINSON

This course is intended for students who have no previous knowledge of French.

The instruction is planned so as to enable students to read at sight ordinary French prose. Reading and oral drill will constitute a large part of the work of the course. In connection with the reading, a careful study of the essentials of grammar and syntax will be taken up, together with simple composition. Attention will be paid to correct pronunciation, and as far as possible to the understanding of simple spoken French.

**French eA3-A4—Elementary course.** Credit I, IV. 2 points each Session. Mr. SWANN

9-10:40 a. m., Saturday, Room 512 Journalism. Fee \$12 each Session

Equivalent to Course eA1.

**French eA5-A6—Elementary course.** Credit I, IV. 2 points each Session. Mr. SWANN

11 a. m.-12:40 p. m., Saturday, Room 512 Journalism. Fee \$12 each Session

This course is supplementary to French eA3-A4 and is equivalent to French eA2.

**French eA8—Elementary course.** Credit I, IV. 4 points Spring Session. Fee \$24

Section 1—4:30-5:55 p. m., Tuesday, Wednesday and Friday, Room 303 Hamilton. Dr. MANTZ

Section 2—4:30-5:55 p. m., Monday, Wednesday and Thursday, Room 307 Hamilton. Mr. DE LA ROCHELLE

Section 3—7-8:15 p. m., Tuesday; 7-8:45 p. m., Wednesday; and 7-8:15 p. m., Friday, Room 406 Hamilton. Mr. SWANN

Equivalent to French eA1, given in the Spring Session for students who enter at that time.

This course should be followed by French eA9 in the succeeding Session. For description see French eA1-A2 above.

**French eA9—Elementary course.** Credit I, IV. 4 points Winter Session. Fee \$24

Section 1—4:30-5:55 p. m., Tuesday, Wednesday and Friday, Room 303 Hamilton. Dr. MANTZ

Section 2—4:30-5:55 p. m., Monday, Wednesday and Thursday, Room 307 Hamilton. Mr. DE LA ROCHELLE

Section 3—7-8:15 p. m., Tuesday; 7-8:45 p. m., Wednesday; 7-8:15 p. m., Friday, Room 406 Hamilton. Mr. SWANN

Equivalent to French eA2. Planned also for students who began the study of French in the Summer Session. It is suitable for persons who have had one year of French.

**French eA11-A12—Shorter elementary course.** Credit I, IV. 3 points each Session. Fee \$18 each Session.

Section 1—4:30-5:45 p. m., Tuesday and Friday, Room 609 Journalism.  
Professor SPIERS

Section 2—7-8:15 p. m., Monday and Thursday, Room 303 Hamilton. Mr.  
FERARU

Section 3—4:30-5:45 p. m., Monday and Thursday, Room 311 Havemeyer.  
Dr. ALEXANDER

This course is also intended for students who have no previous knowledge of French and differs from French eA1-A2 in the following particulars: It meets twice weekly for a period of seventy-five minutes; the additional oral drill is eliminated; and emphasis is placed upon reading. A careful study of the essentials of grammar and syntax will be taken up together with simple composition. Attention will be paid to correct pronunciation and, so far as time allows, to the understanding of simple spoken French.

**French eB1-B2—Intermediate course—grammar, reading and composition.** Credit I, IV. 4 points each Session. Fee \$24 each Session

Section 1—4:30-5:55 p. m., Monday, Wednesday and Thursday, Room 605  
Journalism. Mr. OLINGER

Section 2—2:30-3:55 p. m., Monday, Wednesday and Thursday. Room 712  
Journalism. Mr. FERARU

Section 3—7-8:15 p. m., Tuesday; 7-8:45 p. m., Wednesday; and 7-8:15 p. m.,  
Friday, Room 303 Hamilton. Mr. ANGER

The work will include a review of the essentials of grammar and much oral practice in reading and conversation. The reading will consist of narrative and historical texts and several plays.

**French eB3-B4—Intermediate course—grammar, reading and composition.** Credit I, IV. 2 points each Session. Dr. MANTZ

11 a. m.-12:40 p. m., Saturday, Room 511 Journalism. Fee \$12 each Session  
Equivalent to French eB1.

**French eB8—Intermediate course—grammar, reading and composition.** Credit I, IV. 4 points Spring Session. Fee \$24

Section 1—4:30-5:55 p. m., Tuesday, Wednesday and Friday, Room 309 Ham-  
ilton. Dr. T. CLARK

Section 2—7-8:15 p. m., Tuesday; 7-8:45 p. m., Wednesday; and 7-8:15 p. m.,  
Friday, Room 408 Hamilton. Mr. DE LA ROCHELLE

Equivalent to French eB1, given in the Spring Session. This course should be followed  
by French eB9 in the succeeding session. For description, see French eB1-B2 above.

**French eB9—Intermediate course—grammar, reading and composition.** Credit I, IV. 4 points Winter Session. Fee \$24

Section 1—4:30-5:55 p. m., Tuesday, Wednesday and Friday. Room 309  
Hamilton. Dr. T. CLARK

Section 2—7-8:15 p. m., Tuesday; 7-8:45 p. m., Wednesday; and 7-8:15 p. m.,  
Friday. Room 408 Hamilton. Mr. DE LA ROCHELLE

Equivalent to French eB2, given in the Winter Session. For description, see French eB1-B2  
above.

**French eM1-2—Elementary military French.** 3 points each Session. Pro-  
fessors GERIG and FORTIER, Dr. CLARK and Mr. DE LA ROCHELLE

7-8:15 p. m., Monday and Thursday, Room 502 Hamilton. Fee \$18 each  
Session



This course is especially intended for men who have little or no knowledge of French. It will consist entirely of exercises in conversational French, with special reference to military needs. The work will be based on French conversational and military manuals.

**French e3-4—Practical course and introduction to French literature.** Composition, readings and conversation. Credit I, IV. 3 points each Session. Professor FORTIER

4:30-5:45 p. m., Tuesday and Friday, Room 502 Hamilton. Fee \$18 each Session

The work is to consist of lectures and conversations on the history of French literature, supplemented by the reading of selected works from representative authors.

Equivalent to French 3-4 in Columbia College and Barnard College.

**[French e5-6—French literature in the seventeenth century.** Credit I, IV. 3 points each Session. Fee \$18 each Session. Professor LOISEAUX. Not given in 1918-1919.]

**French e9-10—Advanced composition and practice in speaking French.** Credit I, IV. 3 points each Session. Fee \$18 each Session

Section 1—4:30-5:45 p. m., Monday and Thursday, Room 403 Avery. Professor FORTIER

Section 2—3:10-4:25 p. m., Tuesday and Friday, Room 403 Avery. Mr. OLINGER

The objects of this course are to give students a thorough appreciation and a certain facility in the use of the French language as an instrument of expression. The exercises will consist of composition, and conversation based upon topics of practical everyday French.

**French e15-16—Contemporary French writers 1885-1918.** Credit I. 2 points each Session. Professor SPIERS

4:30-6:10 p. m., Monday, Room 303 Hamilton. Fee \$12 each Session

Rapid reading and discussion of significant poetry, novels, and drama of the present day, accompanied by talks on the general tendencies of French thought before and during the war. Conducted in French.

Those wishing to take this course are requested to communicate with Professor SPIERS as early as possible so that books may be ordered from abroad.

**French e17-18—History of the French drama.** Credit I, IV. 3 points each Session. Professor LOISEAUX. Fee \$18 each Session

4:30-5:45 p. m., Tuesday and Friday, Room 307 Hamilton

The subject of this course is the historical development of the drama in France from its origins to the present time. Course e17 will include approximately the period starting with the earliest productions and ending with the triumph of the Romantic School. Course e18 covers the development of the drama from the Romantic School to the theater of to-day.

The course will be conducted entirely in French.

Equivalent to French 17-18 in Barnard College.

**French e119-120—French literature in the nineteenth century.** Credit II. 3 points each Session. Dr. MANTZ

4:30-5:45 p. m., Monday and Thursday, Room 309 Hamilton. Fee \$18 each Session

The various *genres* will be studied concomitantly, so far as possible, to explain the moral, esthetic and political ideals of France. The problems will include: the heritage from the eighteenth century; journalism; the significance of the triumph of Romanticism; the development of the cosmopolitan interest; science and criticism; the later theories about the

individual and the state and the rôle of the Church; optimism and pessimism and the theory of Art for Art's Sake; naturalism; the Symbolists and other latter-day schools; especial attention will be given to the contemporary period. This course will be conducted entirely in French.

Equivalent to French 119-120 in the Faculty of Philosophy.

**Extension students who are qualified will also be admitted to the following courses:**

**French 101-102—Romance philology.** 3 points each Session. Professor TODD 4:10 p. m., Tuesday and Thursday, Room 508 Philosophy. Fee \$18 each Session

**French 103-104—Old French.** 3 points each Session. Dr. ALEXANDER 2:10 p. m., Tuesday and Thursday, Room 508 Philosophy. Fee \$18 each Session

**French 105-106—General survey of French literature.** 3 points each Session. Professor FORTIER

1:10 p. m., Monday, Wednesday and Friday. Room 302 Philosophy. Fee \$18 each Session

**French 107-108—Old French literature to the fifteenth century.** 3 points each Session. Professor WEEKS

5:10 p. m., Monday, Wednesday and Friday, Room 508 Philosophy. Fee \$18 each Session

**French 109-110—French literature of the fifteenth and sixteenth centuries.** 3 points each Session. Professor GERIG

3:10 p. m., Tuesday and Thursday, and 10 a. m., Saturday, Room 508 Philosophy. Fee \$18 each Session

**French 111-112—Classic period.** 3 points each Session. Professor SPIERS 11 a. m., Monday, Wednesday and Friday, Room 302 Philosophy. Fee \$18 each Session

**French 113-114—French literature of the eighteenth century.** 3 points each Session. Professor LOISEAUX

3:10 p. m., Monday, Wednesday and Friday, Room 508 Philosophy. Fee \$18 each Session

**French 121-122—De L'Optimisme humanitaire au Positivisme.** 2 points each Session. Professor BALDENSPERGER

4:10 p. m., Thursday, Room 307 Philosophy. Fee \$12 each Session

### *Italian*

**Italian e1-2—Elementary course.** Credit I, IV. 3 points each Session. Mr. BIGONGIARI

7-8:15 p. m., Monday and Thursday, Room 518 Hamilton. Fee \$18 each Session

The aim of this course is to impart an accurate reading knowledge of modern Italian, together with a correct pronunciation. The work will consist of a careful study of the elements of grammar and syntax, and in Italian e2 special attention will be paid to reading and composition.

Equivalent to Italian 1-2 as given in Columbia College and Barnard College.

**Italian e3-4—Advanced course.** Credit I, IV. 3 points each Session. Mr. BIGONGIARI

7-8:15 p. m., Tuesday and Friday, Room 518 Hamilton. Fee \$18 each Session

This course will consist of advanced reading, composition and conversation. The two courses together may be considered a preparation for the graduate courses of the Faculty of Philosophy.

Equivalent to Italian 3-4 as given in Columbia College and Barnard College.

### *Portuguese*

**Portuguese e1-2—Elementary course.** Credit I, IV. 3 points each Session. Mr. BRUCE

7-8:15 p. m., Tuesday and Friday, Room 501 Hamilton. Fee \$18 each Session

The aim of this course is to master the elements of the Portuguese language as a basis for intelligent reading, composition and conversation. The spoken language will be used whenever feasible in the classroom.

**Portuguese e3-4—Advanced course.** Credit I, IV. 3 points each Session. Mr. BRUCE

8:20-9:35 p. m., Tuesday and Friday, Room 501 Hamilton. Fee \$18 each Session

For students who have already taken elementary Portuguese or whose previous work in Spanish or other Romance languages gives a basis for profitable prosecution of this course.

Attention will be given especially to composition, sight reading and current conversation. A general notion and appreciation of leading Brazilian and Portuguese authors will be sought for.

### *Spanish*

**Spanish e1-2—Elementary course.** Credit I, IV. 3 points each Session. Fee \$18 each Session

Section 1—3:10-4:25 p. m., Monday and Thursday, Room 301 Mines. Mr. IMBERT

Section 2—3:10-4:25 p. m., Monday and Thursday, Room 302 Engineering. Mr. AGRAMONTE

Section 3—3:10-4:25 p. m., Tuesday and Friday, Room 301 Mines. Mr. TORRES

Section 4—4:30-5:45 p. m., Tuesday and Friday, Room 302 Engineering. Mr. HARRISON

Section 5—4:30-5:45 p. m., Tuesday and Friday, Room 301 Mines. Dr. HARVITT

Section 6—7-8:15 p. m., Tuesday and Friday, Room 309 Hamilton. Dr. T. CLARK

Section 7—7:30-8:45 p. m., Monday and Thursday, Room 307 Hamilton. Mr. WILKINS

Section 8—6:10-7:25 p. m., Tuesday and Friday, Room 307 Hamilton. Mr. AGRAMONTE

Section 9—2:30-3:55 p. m., Monday and Thursday, Room 511 Journalism. Mr. TORRES

Section 10—2:30-3:55 p. m., Tuesday and Friday, Room 302 Engineering. Dr. VAETH

The aim of this course is to impart an accurate reading knowledge of modern Spanish together with a correct pronunciation. The work will consist of a careful study of the elements of grammar and syntax; and in Spanish e2 special attention will be paid to composition.

Equivalent to Spanish 1-2 as given in Columbia College and Barnard College.



**Spanish e3-4—Advanced course.** Credit I, IV. 3 points each Session. Fee \$18 each Session

Section 1—4:30-5:45 p. m., Monday and Thursday, Room 407 Avery. Professor GERIG

Section 2—7-8:15 p. m., Monday and Thursday, Room 309 Hamilton. Mr. MERCADO

Section 3—8:45-10 p. m., Monday and Thursday, Room 307 Hamilton. Mr. WILKINS

A continuation of Spanish er-2, in which emphasis will be placed on rapid reading of modern prose, on advanced composition and conversation.

Equivalent to Spanish 3-4 as given in Columbia College and Barnard College.

**Spanish e5-6—Practical course and introduction to Spanish literature.** Credit I, IV. 3 points each Session. Mr. IMBERT

4:30-5:45 p. m., Tuesday and Friday, Room 201 East. Fee \$18 each Session

The work consists of compositions, conversations and dictations on the history of Spanish literature supplemented by the reading of selected works by representative authors. Students will be required to write themes and reports in Spanish.

Equivalent to Spanish 5-6 as given in Columbia College.

**Spanish e8—Elementary course.** Credit I, IV. 3 points Spring Session. Fee \$18

Section 1—4:30-5:45 p. m., Monday and Thursday, Room 307 Havemeyer. Dr. T. CLARK

Section 2—6:10-7:25 p. m., Monday and Thursday, Room 307 Hamilton. Mr. WILKINS

A course for students who have no knowledge of Spanish. Equivalent to Spanish er above.

**Spanish e9—Elementary course.** Credit I, IV. 3 points Winter Session. Fee \$18

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 307 Havemeyer. Dr. T. CLARK

Section 2—6:10-7:25 p. m., Monday and Thursday, Room 307 Hamilton. Mr. WILKINS

Follows Spanish e8 and is planned for students who have had a half year of Spanish.

**Spanish e11-12—Elementary course.** Credit I, IV. 2 points each Session. Mr. WILKINS

3:10-4:50 p. m., Saturday, Room 507 Journalism. Fee \$12 each Session

A course for students having no knowledge of the language.

**Spanish e13-14—Intermediate course.** Credit I, IV. 2 points each Session. Mr. WILKINS

1:30-3:10 p. m., Saturday, Room 507 Journalism. Fee \$12 each Session

Continuation of Spanish er1-12. Spanish er1, 12 and 13 are equivalent to Spanish er-2.

**Spanish e15-16—Advanced composition and Spanish conversational practice.** Credit I, IV. 3 points each Session. Mr. AGRAMONTE

4:30-5:45 p. m., Monday and Thursday, Room 507 Journalism. Fee \$18 each Session

The object of this course is to give the student practice in spoken and written Spanish with special reference to commercial practice, including composition, reading, dictation, and letter

writing. Attention will be paid to legal, commercial and technical terms in most common use. Equivalent to Spanish e3-4.

**Extension students who are qualified will also be admitted to the following course:**

**Spanish 101-102—Historia de la Novela Española.** 3 points each Session. Professor DE ONÍS

5:10 p. m., Monday and Friday, Room 302 Philosophy. Fee \$18 each Session

**The attention of students in Romance languages is called to the evening classes in Spoken Language described in a separate bulletin.**

## RUSSIAN

**Russian e102—The elements of the Russian language with instruction in reading, writing and speaking.** Credit II. 3 points Spring Session. Professor PRINCE

4-5:40 p. m., Friday, Room 406 Philosophy. Fee \$18

The object of this course is to enable students, who have arrived too late to begin Russian in the regular University course, to commence their study of the language during the Spring Session.

**Russian e103-104—The history of the Eastern question.** Lectures and conferences. Credit II. 3 points each Session. Mr. KALENDERIAN

7:30-9:10 p. m., Tuesday, Room 307 Hamilton. Fee \$18 each Session

This course deals with the fate of the Ottoman Empire in Europe, Asia and Africa. A brief survey of the Byzantine and Latin Empires; the conquest of the Turks; the fall of Constantinople and its influence on the successive phases of European diplomacy. The history of the Eastern question during the eighteenth century. Napoleon's Oriental projects; the Holy Alliance and the Eastern question up to the present time, including the present war.

Attention is to be given, with the historical side of the question involving the national and international aspects, to the racial characteristics, the religions, economic and social conditions and cultural background of the peoples involved.

**Russian e107-108—Elementary commercial Russian.** Credit II. 3 points each Session. Professor PRINCE and instructor

8:20-9:35 p. m., Tuesday and Friday, Room 607 Hamilton. Fee \$18 each Session

**Russian e109-110—Advanced commercial Russian.** Credit II. 3 points each Session. Professor PRINCE and instructor

7-8:15 p. m., Tuesday and Friday, Room 607 Hamilton. Fee \$18 each Session

**History e125—History of Russia.** Lecture-study course. Credit II. 3 points Winter Session. Professor PRINCE

4-4:50 p. m., lecture; 4:50-5:40 p. m., conference, Wednesday, Room 701 Philosophy. Fee \$18

The work will cover a careful treatment of Russian history from the earliest times to the modern period, with a discussion of the attitude of Russia during the present war and a brief survey of its literary development. In connection with this work should be noted the following course which stands in close relation to the history of Russia and is a desirable supplement in order to understand Russian development.

**History e126—History of Russia in connection with Serbia, Bulgaria, Poland, and Bohemia.** Credit II. 3 points Spring Session. Professor PRINCE Lecture, 4-4:50 p. m., Wednesday; conference, 4:50-5:40 p. m., Wednesday, Room 701 Philosophy. Fee \$18

Attention is also called to the courses in the Spoken Language (see special circular).

### SECRETARIAL CORRESPONDENCE

**Secretarial correspondence e1-2—Letter writing.** 3 points each Session. Fee \$18 each Session

Section 1—4:30-5:45 p. m., Monday and Thursday, Room 302 Engineering. Miss HULL

Section 2—7-8:15 p. m., Tuesday and Friday, Room 509 Hamilton. Dr. SCARBOROUGH

This course is intended for those desiring employment as social secretaries, for those desiring to gain facility in various forms of letter writing for personal use, and for those desiring advance work in the problems of style in written expression. It aims to establish standards of judgment for form and expression in accordance with the best current usage; to comprehend that usage from two angles, a study of the development of letter writing, and an analysis of the principles underlying present letters; to develop individuality of style. The content of the course is twofold: constant practice in writing, with critical work on current letters, and study of the best published letters. The Winter Session consists of drill in conventions of form, and in the essential qualities of all letters; the emphasis is upon the letter as an expression of the relation between the writer and the receiver. The Spring Session contains a study of the letter as a social and personal document, with work toward flexibility and power of individual expression.

English A1-eA2 or its equivalent in collegiate composition training is prerequisite.

### SECRETARIAL STUDIES

The University offers through its School of Business and the Department of Extension Teaching classes in secretarial studies. In Extension Teaching these courses normally require two years.

A special circular will be sent on application to the Secretary of Columbia University.

### SEMITIC

**Semitic e124—Post-Biblical Jewish history.** Credit II. 2 points Spring Session. Dr. RADIN

4-6 p. m., Thursday, Room 707 Journalism. Fee \$12

The purpose of this course is to acquaint the student with the main outlines of Jewish History from the end of the Babylonian Exile to about 500 A. D. This will be done principally by examination of the sources as far as they are available in English. Lectures and assigned readings

SLAVONIC (See Russian, p. 88)

### SOCIOLOGY

**Sociology e51—Introductory sociology: elementary principles of sociology.** Lectures, readings and laboratory. Credit I, IV. 2 points Winter Session. Mr. BOWMAN.

4:10-5 p. m., Wednesday and Friday, Room 307 Engineering. Fee \$12

A non-technical course for mature students of society. The place of sociology among sciences. Analysis of the physical, biological and psychological factors conditioning social organization. Comparative study of the fundamental concepts of sociologists from Comte to Giddings. Sociological theories of human progress.

The equivalent of Sociology 1 in Columbia College.



**Sociology e51a—Laboratory work in connection with Sociology e51.** Credit I, IV. 1 point Winter Session. Mr. BOWMAN  
4:10-5 p. m., Monday, Room 307 Engineering. Fee \$6

**Sociology e52—Practical sociology: social conditions in the United States.** Lectures, readings and laboratory. Credit I, IV. 2 points Spring Session. Mr. BOWMAN

4:10-5 p. m., Wednesday and Friday, Room 307 Engineering. Fee \$12

A presentation of facts describing actual conditions of the social population of the United States. Population: density, increase, distribution, nativity, sex, age groups, marital condition, mortality, etc. Record of marriage and divorce. Nature and development of our educational and industrial organizations. Special social problems in the United States, including public health, temperance, prevention of crime, etc.; also a community study to be made by each student.

The equivalent of Sociology 2 in Columbia College.

**Sociology e52a—Laboratory work in connection with Sociology e52.** Credit I, IV. 1 point Spring Session. Mr. BOWMAN  
4:10-5 p. m., Monday, Room 307 Engineering. Fee \$6

**Sociology e53—Community analysis.** Lectures, readings and laboratory. Credit I, IV. 2 points Winter Session. Mr. BOWMAN

5:10-6:00 p. m., Wednesday and Friday, Room 307 Engineering. Fee \$12

Early forms and development of the community. Submergence of community in expanding political groups: reappearance in recent decentralization movement. Analysis of geographical and ethnological basis of the neighborhood. Origin of group ideals. Deflection of larger group appeals by neighborhood influences. Community organization. Forms of community action. Principles of neighborhood leadership.

**Sociology e53a—Laboratory work in connection with Sociology e53.** Credit I, IV. 1 point Winter Session. Mr. BOWMAN  
4:10-5 p. m., Monday, Room 307 Engineering. Fee \$6

**Sociology e54—Community socialization.** Lectures, readings and laboratory. Credit I, IV. 2 points Spring Session. Mr. BOWMAN

5:10-6 p. m., Wednesday and Friday, Room 307 Engineering. Fee \$12

Principles of survey: review of community survey; the survey as stimulant to community action. Types of present day communities. Experiments in socialization. Fields of neighborhood activities; social, political, economic, industrial and cultural. Comparison of various types of community organizations and of various developments of community socialization. Influences of racial composition, local customs. Expressions of distinctly local aspirations. Utilization of neighborhood social forces. The community as a unit of the city, state and nation.

**Sociology e54a—Laboratory work in connection with Sociology e54.** Credit I, IV. 1 point Spring Session. Mr. BOWMAN  
4:10-5 p. m., Monday, Room 307 Engineering. Fee \$6

**Sociology e110—Public health and standard of living.** Credit II, IV. 2 points Spring Session. Professor CHADDOCK

4-6 p. m., Friday, Room 502 Kent. Fee \$12

This course treats in lectures, reports and discussion the various phases of human conservation, and their economic and social significance. War conditions emphasize as never before the importance of measures to promote infant and child welfare; to improve the health of school children; and to protect, at all stages of their industrial life, the workers of industry. The pressure of war production and the burden of war prices endanger the health, the working capacity, and the standard of living of large groups. The standards of physical fitness for

army service have revealed the consequences of past neglect. Records of physical defects, illness, mortality, individual output in industry acquire a national importance. The administration of health-promoting activities and the protection of the standard of living are becoming matters of national concern.

**Sociology e141—Social problems: immigration and social assimilation.**

Lectures, readings and discussions. Credit II, IV. 3 points Winter Session.

Mr. SHENTON

7:40-9:30 p. m., Wednesday, Room 615 Kent. Fee \$18

Immigration as a world movement. Why people migrate. Social significance of immigration and intra-migration, especially in the United States. Studies of nativity, race-mixture, social heterogeneity, standards of living, etc. The problem of assimilation or Americanization. Constructive plans for the regulation of immigration and for the assimilation of the alien.

**Sociology e142—Social problems: social betterment.** Lectures, readings and discussions. Credit II, IV. 3 points Spring Session. Mr. SHENTON

7:40-9:30 p. m., Wednesday, Room 615 Kent. Fee \$18

The development of movements for human betterment, including eugenics, euthenics, social legislation, socialized philanthropy and social education. Problems of normal and abnormal society. Constructive sociological criticisms of various methods of social reform.

**Sociology e143—Social institutions: institutions of component society.**

Lectures, readings, discussions and exercises. Credit II, IV. 3 points Winter Session. Mr. SHENTON

7:40-9:30 p. m., Thursday, Room 615 Kent. Fee \$18

The effort of society to exert social self-control by means of folk-ways, folk-lore, mores, traditions and social institutions; origin, development and present functions of the more fundamental social institutions and their present tendencies. Those institutions having their origin in the earliest forms of society, *i. e.*, kinship, religion and politics, will be discussed during this Session.

**Sociology e144—Social institutions; institutions of constituent society.**

Lectures, readings, discussions and exercises. Credit II, IV. 3 points Spring Session. Mr. SHENTON

7:40-9:30 p. m., Thursday, Room 615 Kent. Fee \$18

Educational institutions will be studied in respect to their social beginnings, the crises in their development and their present functions in society. Social self-control will be further studied as it operates through legal institutions (including status, contract and social legislation); industrial institutions (including property and labor); political institutions (including leadership and organization); and the general institutions of democratic society. Policies of *laissez-faire* as opposed to those of social control. Relations of individuals and social institutions to society.

**Sociology e145—Social policies: general problems of social adjustment.**

Lectures, readings and discussions. Credit II, IV. 3 points Winter Session. Mr. THOMAS

7:40-9:30 p. m., Friday, Room 615 Kent. Fee \$18

Care of the weak by the strong historically considered. Development in America of the ideas in the English Poor Law. Volunteer propagandist organizations. Philanthropy and the social surplus. Federal, state, county, civic and private philanthropic organizations. Socialization of medicine. Other definite movements and organizations for social adjustment.

**Sociology e146—Social policies: special problems of social adjustment.**

Lectures, readings and discussions. Credit II, IV. 3 points Spring Session. Mr. THOMAS

7:40-9:30 p. m., Friday, Room 615 Kent. Fee \$18

The care of the poor. Paupers both in and out of almshouses. Homeless men. Vagrancy problems. Vagrancy colonies. Care of the sick. Dependent children. Care of the feeble-minded and the insane. Plans for rehabilitating the wounded. Occupational work for men crippled in the war. In all cases including the consideration of practical ways and means and the development of critical and constructive programs.

**Sociology e147-148—Social statistics: principles and methods.** Lectures, readings and laboratory exercises. Credit II. 3 points each Session. Mr. JONES

7:40-9:00 p. m., Tuesday and Thursday, Room 502 Kent. Fee \$18 each Session

The elements of statistical theory that are useful in the analysis of social problems. Data gathering, the several forms of the average, measures of dispersion, reliability of measures, fundamentals of correlation. Organization of investigations, analysis of material and methods of presentation. The course is intended to provide the student with the fundamental tools for sociological research of a statistical nature and for social investigation.

**Sociology e150—Statistics: principles and methods.** Lectures, readings and laboratory exercises. Credit II. 3 points Spring Session. Professor CHADDOCK  
7:40-9:30 p. m., Wednesday, Room 502 Kent. Fee \$18

Elementary principles of statistics and their application. Study of how to gather, present and interpret statistical data. Averages, index-numbers, measures of variation from average principles of graphic method, and correlation. Application of principles is required through laboratory courses, and effort is made to acquaint the student with sources of information. Laboratory hour will be arranged.

**Sociology e151—Principles of sociology.** Lectures, readings, discussions and exercises. Credit II, IV. 3 points Winter Session. Mr. SHENTON  
7:40-9:30 p. m., Monday, Room 503 Kent. Fee \$18

A course in social theory. A statement and study of Professor F. H. GIDDINGS' principles of sociology up to the present time. The scope and methods of sociology. Theories of social evolution, social causation and organization. The development of social consciousness and of the social mind. Comparative study of various theories of social progress.

Text-book: Giddings, *Descriptive and Historical Sociology*.

**Sociology e152—Fundamental problems of democracy.** Lectures, readings and discussions. Credit II, IV. 3 points Spring Session. Mr. SHENTON  
7:40-9:30 p. m., Monday, Room 503 Kent. Fee \$18

This course will be devoted to the study of two of the most fundamental problems of democratic action. Collective decision and collective agreements, or how groups of people make decisions, and the responsibility resting upon them for such decisions, will be the first problem discussed. Social organization, or the way in which groups of people relate themselves to each other in order to carry out their common determination, will be the second problem discussed.

**Sociology e315-316—Seminar.** Discussions, research and thesis preparation. Credit II. 3 points each Session. Mr. SHENTON

7:40-9:30 p. m., alternate Tuesdays, beginning October 8, Room 503 Kent. Fee \$18 each Session

Methods of sociological study and research. Sociological sources. Work supplementing the Extension Teaching courses in sociology, covering especially social assimilation, social institutions, collective decisions and social organization. Attention will be given to the preparation of the theses required of all candidates for the degree of A.M. in sociology.



**Extension students who are qualified will also be admitted to the following courses:**

**Sociology 255—Social evolution: ethnic and civil origins.** 3 points Winter Session. Professor GIDDINGS

2:10 and 3:10 p. m., Friday, Room 515 Kent. Fee \$18

The interests and achievements of mankind, considered as obtained by both individual and collective effort; the origins of social evolution, including the rise of current action; ways of ameliorating the struggle for existence; the prehistoric evolution of society, including collective struggle for vital conditions, for equipment, for effectiveness, for surplus and power; primitive social forms; ethnic groupings; the dawn of history.

(Identical with History 255.)

**Sociology 256—Social evolution: civilization, liberty and democracy.** 3 points Spring Session. Professor GIDDINGS

2:10 and 3:10 p. m., Friday, Room 515 Kent. Fee \$18

The evolution of historic civilizations; religious-military civilizations, particularly those of Babylonia and Egypt; the function of slavery; discipline and standardization; the creation of economic surplus; liberal-legal civilizations, particularly those of Greece and Rome; the achievement of liberty and individuality; the beginnings of voluntary association and of democratic experimentation.

(Identical with History 256.)

**Social economy 111—Social legislation.** 3 points Winter Session. Professor LINDSAY

5:10 p. m., Tuesday and Thursday, Room 515 Kent. Fee \$18

The historical development of the principles of social legislation; the scope of legislative remedies; the methods of technique and legislative procedure; the citizenship organization for the education and direction of public opinion to secure effective legislative remedies will be studied with particular reference to the social problems or urban and rural community life, especially poor relief, housing, congestion, town planning, health and sanitation, education and recreation, liquor and traffic, and the social evil.

**Social economy 112—Social legislation.** 3 points Spring Session. Professor LINDSAY

5:10 p. m., Tuesday and Thursday, Room 515 Kent. Fee \$18

Recent development and applications of the principles of: (1) Labor legislation dealing with such topics as women and child wage-earners, industrial accidents; workmen's compensation; social insurance; unemployment; compulsory rest periods; industrial disputes and tactics and legal rights of organized employees' and employers' associations. (2) Humane legislation dealing with prevention of cruelty to children and animals, treatment of criminals, and mitigation of the evils of war.

## STENOGRAPHY AND TYPEWRITING

### *Isaac Pitman System*

The courses described below are planned for high school and college graduates who wish to prepare themselves for stenographic or secretarial duties and for students who desire to become teachers of shorthand and typewriting. Classes for beginners are started at the opening of each Winter, Spring, and Summer Session.

In addition to a careful presentation of the principles of stenography and typewriting, instruction is given also in the following subjects: Secretarial and stenographic duties; editing; meeting office callers; telephoning; taking dictation; effective arrangement and display of typewriting; various arrangements, forms,

and different parts of a letter; preparation of outgoing and incoming mail; commercial abbreviations; office reference books; remittance forms and other commercial papers; shipping and the papers involved; telegrams and cablegrams; practical information for typists; different parts of the typewriter and its care and repair; stencil cutting; operation of the mimeograph. The work is conducted as nearly like that of a business office as it is possible to do in the classroom. The touch method of typewriting as practised by rapid operators is taught.

Before receiving final credit for the second session in stenography and typewriting, students must complete a week of practice work in the office of the Director.

Students registered in all shorthand classes must pass an examination held regularly on the third Saturday afternoon of the Winter Session and of the Spring Session, in elementary English, including grammar, composition, spelling and punctuation, before receiving credit for the course.

In Room 509 Journalism Building there is an extensive shorthand library to which students have access.

The courses in stenography and typewriting are under the general supervision of Mr. WILLIAM E. HARNED, Room 509 Journalism. Office hours, 3:00-4:00 p. m., Tuesdays and Thursdays.

### *Morning Courses*

The morning courses are completed in one college year of thirty weeks. Students completing the courses are able to write shorthand at the rate of one hundred and twenty-five words a minute and to transcribe their notes on the typewriter at the rate of thirty words a minute. To obtain full credit, students registering for stenography are required to take the corresponding course in typewriting, as designated below.

**Stenography e1-2—Elementary and intermediate.** 6 points each Session. Fee \$36 each Session

Section 1—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday and Friday; 10-11, Room 612 Journalism; 1-2, Room 707 Journalism. Mr. HARNED

Section 2—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday; 11 a. m.-12 m., Room 612 Journalism; 2-3 p. m., Room 713 Journalism. Miss DEARBORN

Section 3—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 612 Journalism. Mr. J. J. WRIGHT

Section 4—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 605 Journalism. Mr. BEIDLEMAN

This course is planned for beginners and should be taken in conjunction with Typewriting e1-2. All secretarial students working for a certificate are required to complete this course and Typewriting e1-2.

**Typewriting e1-2—Elementary and intermediate.** 4 points each Session. Fee \$24 each Session

Section 1—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 601 Journalism. Mr. HARNED

Section 2—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 601 Journalism. Miss DEARBORN

Section 3—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 602 Journalism. Mr. J. J. WRIGHT

Section 4—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 602 Journalism. Mr. BEIDLEMAN

This course is planned for beginners and should be taken in conjunction with the corresponding sections of Stenography *er-2*.

**Stenography e4—Elementary.** 6 points Spring Session. Fee \$36

Section 1—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 507 Journalism. Mr. BRYANT

Section 2—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, 10-11 a. m., Room 712 Journalism; 1-2 p. m., Room 611 Journalism. Mr. MILLER

This course is planned for beginners and should be taken in conjunction with Typewriting *e4*.

**Typewriting e4—Elementary.** 4 points Spring Session. Fee \$24

Section 1—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 601 Journalism. Mr. BRYANT

Section 2—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 602 Journalism. Mr. MILLER

This course is planned for beginners and should be taken in conjunction with Stenography *e4*.

**Stenography e5—Intermediate.** 6 points Winter Session. Fee \$36

Section 1—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 507 Journalism. Mr. BRYANT

Section 2—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, 10-11 a. m., Room 712 Journalism; 1-2 p. m., Room 611 Journalism. Mr. MILLER

This course is planned for students who have completed Stenography *e4* or *er*, or the equivalent, and should be taken in conjunction with Typewriting *e5*. All secretarial students working for a certificate are required to complete this course, or Stenography *e2*, and Typewriting *e5*.

**Typewriting e5—Intermediate.** (Speed practice and transcription.) 4 points Winter Session. Fee \$24

Section 1—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 601 Journalism. Mr. BRYANT

Section 2—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 602 Journalism. Mr. MILLER

This course is planned for students who have completed Typewriting *e4* or *er*, or the equivalent, and should be taken in conjunction with Stenography *e5*.

**Stenography e9-10—Advanced.** 2 points each Session. Miss DEARBORN  
3:10-4 p. m., Tuesday, Wednesday, and Friday, Room 610 Journalism. Fee \$12 each Session

All second-year secretarial students who have completed the morning shorthand and typewriting courses, or who have obtained stenographic instruction in other schools, are required to attend this course three days of each week for the whole of the second year. General, business, and legal dictation will be given at a rate varying from one hundred to two hundred words a minute.

#### *Afternoon and Evening Courses*

The courses offered in the afternoon and evening are planned for students who can give only a portion of their time to the study of shorthand and typewriting.



Both elementary and continuation classes are started in September and February. Students registering for stenography are urged to take the corresponding course in typewriting, as designated below. After a study of both shorthand and typewriting for forty-five or sixty weeks, students are able to write shorthand at the rate of one hundred words a minute, to transcribe their shorthand notes on the typewriter at the rate of twenty-five words a minute, and to perform the usual stenographic duties in a business office.

**Stenography e11-12—Elementary.** 3 points each Session. Mr. MILLER  
5:15-6:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 611 Journalism. Fee \$18 each Session

This course is planned for beginners and should be taken in conjunction with Typewriting e11-12.

**Typewriting e11-12—Elementary.** 2 points each Session. Mr. MILLER  
4:15-5:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 601 Journalism. Fee \$12 each Session

This course is planned for beginners.

**Stenography e14—Elementary.** 3 points Spring Session. Mr. LYNAUGH  
4:15-5:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 611 Journalism. Fee \$18

This course is planned for beginners and should be taken in conjunction with Typewriting e14

**Typewriting e14—Elementary.** 2 points Spring Session. Mr. LYNAUGH  
5:15-6:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 602 Journalism. Fee \$12

This course is planned for beginners.

**Stenography e17-18—Intermediate.** 6 points each Session. Mr. LYNAUGH  
4:15-6:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 712 Journalism. Fee \$36 each Session

This course is planned for students who have completed Stenography e11-12 or e14, or the equivalent. A large portion of the class period is devoted to dictation or speed practice. However, a part of each class period is devoted to the transcription of shorthand notes either on the typewriter or in pencil. From time to time there is a little speed practice on the typewriter.

**Stenography e21-22—Elementary.** 2 points each Session. Mr. BRYANT  
7:30-8:30 p. m., Monday, Wednesday, and Friday, Room 611 Journalism. Fee \$12 each Session

This course is planned for beginners and should be taken in conjunction with Typewriting e21-22.

**Typewriting e21-22—Elementary.** 2 points each Session. Mr. BRYANT  
8:30-9:30 p. m., Monday, Wednesday, and Friday, Room 601 Journalism. Fee \$12 each Session

This course is planned for beginners.

**Stenography e24—Elementary.** 2 points Spring Session. Mr. BEIDLEMAN  
8:30-9:30 p. m., Monday, Wednesday, and Friday, Room 611 Journalism. Fee \$12

This course is planned for beginners and should be taken in conjunction with Typewriting e24.

**Typewriting e24—Elementary.** 2 points Spring Session. Mr. BEIDLEMAN  
7:30–8:30 p. m., Monday, Wednesday, and Friday, Room 601 Journalism.  
Fee \$12

This course is planned for beginners.

**Stenography e25—Elementary.** 2 points Winter Session. Mr. BEIDLEMAN  
8:30–9:30 p. m., Monday, Wednesday, and Friday, Room 611 Journalism.  
Fee \$12

This course is planned for students who have completed Stenography e24 and should be taken in conjunction with Typewriting e25.

**Typewriting e25—Elementary.** 2 points Winter Session. Mr. BEIDLEMAN  
7:30–8:30 p. m., Monday, Wednesday, and Friday, Room 602 Journalism.  
Fee \$12

This course is planned for students who have completed Typewriting e24.

**Stenography e26-27—Intermediate.** 4 points each Session. Mr. HUGHES  
7:30–9:30 p. m., Monday, Wednesday, and Friday, Room 609 Journalism. Fee  
\$24 each Session

This course is planned for students who have completed Stenography e21-22 or e24-25, or the equivalent. A large portion of the class period is devoted to dictation or speed practice. However, a part of each period is devoted to transcription of shorthand notes either on the typewriter or in pencil. From time to time there is speed practice on the typewriter.

## TYPOGRAPHY

**Typography e1—Proof-reading and the preparation of manuscript.**  
2 points Winter Session. Mr. MCCARTHY  
4:30–6:10 p. m., Thursday, Room 609 Journalism. Fee \$12

A brief outline of the history of typography will be followed by a practical explanation of present-day printing methods and a description of the different systems of hand and machine type-setting employed in modern establishments. Detailed instruction will be given in the preparation of manuscript for the compositor and in proof-reading. The work in proof-reading will include drill in the actual correction and revision of galley, page, and final proofs, with special attention to spelling, correct division of words, and uniformity in punctuation, capitalization, abbreviations, and minor matters of style. The work is planned to be of special value to authors, editors, secretarial students, and others who may be called upon to prepare manuscript for the printer.

## ZOOLOGY

**Zoology e1a-2a—Elementary biology and zoology.** Lectures and laboratory. Credit I, IV. 2 points each Session. Professor MCGREGOR and assistant  
1:45–2:35 p. m., Saturday; laboratory, 2:40–4:30 p. m., Saturday, Room 619 Schermerhorn. Fee \$12 each Session

The earlier part of this course is designed to give the student an elementary knowledge of the basic principles of biology and the general physiology of organisms. Protoplasm, the cell, unicellular organisms, plant and animal in relation to each other and to the inorganic world are the chief topics discussed in the Winter Session. The Spring Session is mainly devoted to the study of the structures and adaptations of some of the more important groups of animals, with dissection of types in the laboratory. Among the types studied may be mentioned amoeba, paramecium, hydra, earthworm, lobster, grasshopper, clam, and dogfish. Practically equivalent to Zoology 1 in Columbia College. This course should be supplemented by Botany e1-2 to form the one year of biology required by law for pre-medical students.

A text-book will be used and collateral reading assigned.

Prerequisite: Natural science A, or elementary chemistry or physics.

## PRACTICAL ARTS

### Officers of Administration for Extension Teaching in the School of Practical Arts

JAMES EARL RUSSELL . . . . . Dean of Teachers College  
MAURICE A. BIGELOW . . . . . Director of School of Practical Arts  
CLIFFORD B. UPTON . . . . . Secretary of Teachers College  
BESSIE CARROLL . . . . . Secretary to the Director of School of Practical Arts  
JESSICA BINGHAM REED . . . . . Assistant to the Secretary of Teachers College

The School of Practical Arts of Teachers College, in cooperation with the University Department of Extension Teaching, offers certain courses of instruction to qualified students who have not matriculated in any part of Columbia University as candidates for degrees. Such non-matriculated students will be admitted only to Practical Arts classes which are designated e (extension) or esp (extension special). The permission of the departments concerned must be obtained before registering for extension courses marked with \* (e. g., **\*Cookery** e2).

Practical Arts extension courses which are announced as having Credit IV may be credited towards the Bachelor of Science degree if satisfactorily completed by non-matriculated students who afterwards matriculate in the School of Practical Arts. The possible credit in points is stated in the description of courses.

Practical Arts extension special courses (marked esp: e. g., **Cookery** esp 42) are intended for popular instruction and cannot be credited towards degrees or entrance requirements.

The extension courses in practical arts are not open to women under twenty-one years of age who do not reside with their parents or relatives.

An extension student may not register for more than 8 points per Session in any one department of the School of Practical Arts.

**Matriculated students of Teachers College or of other parts of the University who wish to register for part-time programs should choose courses from the Announcement of the School of Practical Arts or from the special bulletin of Afternoon, Evening and Saturday Classes in Teachers College. The extension courses announced in this bulletin are not credited if taken by matriculated students unless they obtain in advance written approval from the Committee on Instruction.**

**Registration for Practical Arts Extension Courses.** Students register for Practical Arts extension courses at the office of the Registrar, University Hall, Columbia University. Information concerning such courses may be obtained at Table E in the office of the Secretary of Teachers College daily 9 a. m.-12 m., and 2-4 p. m., except Saturday afternoon; and also 7-8 p. m., on the evenings when courses begin.

Changes of programs, such as dropping or adding courses, can be made only at the Registrar's office in University Hall, where the complete records are kept on file. Permission to add courses marked with \* must be obtained from the instructor before changing programs at the Registrar's office.



*Number of students required* in classes is indicated in descriptions of certain courses. Such classes may be discontinued if the required number of students are not registered before the time for the second lesson.

*Limited classes.* Many classes for practical work are limited as to number of students. Such classes are indicated by the letter L affixed to the course number (e. g., **\*Cookery e2L**). Extension students must reserve places by personal application to the clerk in charge of extension classes, Desk E, Secretary's Office, Teachers College. Reservations must be made at the time of registration. Places will not be held for students who do not report to the instructor at the first lesson. In case of withdrawal from courses which have a required minimum registration, no fees will be returned.

Students who register in the Winter Session for courses which extend throughout the year must at the beginning of the Spring Session call at Desk E, Secretary's Office, Teachers College, and arrange to renew their registrations. Fees are payable at the Office of the Bursar, University Hall.

Admission of extension students to Practical Arts classes with Credit IV will not be permitted after Saturday, October 5, unless for reasons of weight special permission for registration without credit is granted by the Director of the School of Practical Arts.

The University fee of \$5 per year is charged all extension students who register for Practical Arts courses marked e, but not to those who take only the popular lecture courses marked esp.

Unless special dates are mentioned in the following pages, all courses in Practical Arts are on the regular schedule of the School of Practical Arts, beginning Wednesday, September 25, 1918, for the Winter Session and Wednesday, February 5, 1919, for the Spring Session.

Special registration hours for extension students in Practical Arts for the Winter Session are Tuesday and Wednesday, September 24 and 25, 4 to 6 p. m., Saturday, September 28, 9 to 12; and for the Spring Session, Tuesday and Wednesday, February 4 and 5, 4 to 6 p. m., and Saturday, February 8, 9 to 12.

**Courses for 1918-1919.** In the following pages are statements regarding the Practical Arts courses that are open to extension students during the academic year September 1918-1919. In *Practical Science* there are courses in biology and chemistry. In *Fine Arts* there are courses in art appreciation, art structure, drawing, painting, costume design, house design, art industries, art photography. In *Household Arts* there are courses in cookery, nutrition, textiles and clothing, and household administration and economics. In *Industrial Arts* there are courses in mechanical drawing, metalworking, woodworking and teaching industrial arts. In *Music* there are both lecture and practical courses for teachers and others. In *Nursing and Health* there are courses for nurses and home-makers. In *Physical Education* there are a few elementary courses for teachers and a number of exercise courses at hours convenient for those who are not college students.

The attention of students is called to the fact that the numbers of courses and many details in the statement of the classes and hours are different in this section of the Announcement from those found on the preceding pages.

## PRACTICAL SCIENCE

Laboratory ticket: Students in all laboratory courses in the School of Practical Arts are required to purchase from the Bursar of Teachers College a laboratory breakage ticket, good for all science departments, price \$2. Unused coupons are redeemable at the end of any Session.

*Biology*

**\*Biology e4x—Biology for sex-education.** Credit IV. 1 point Spring Session, when taken supplementary to any course in hygiene or biology. Open only to women. Miss STACKPOLE

5:10—6 p. m., Monday, Room 421 T. C. Fee \$6

Requires fifteen students

A series of fifteen illustrated lectures and laboratory demonstrations dealing with the anatomical, physiological, embryological and bacteriological facts of biology which are necessary for understanding sex-education.

**\*Biology e51-52—Biological nature-study.** Lectures, laboratory work, field work and reading. Credit IV. 2 points each Session. Professor BROADHURST and Miss STACKPOLE

3:10—5 p. m., Monday and Wednesday, Room 423 T. C. Fee \$12 each Session

Requires fifteen students

This course is a general introduction to the nature-study of common animals and plants. The Winter Session is chiefly plant nature-study, while the Spring Session is largely devoted to animals. The names, life-histories, habits, relations to man, and other facts of popular interest concerning living things are emphasized. Trees and forestry, cultivated plants, wild flowers, birds, insects, domesticated animals, and other materials important in nature-study are selected for study. Both Sessions are essential for teachers of nature-study and biology, but general students may register for either Session.

**\*Biology e57L—Elementary microbiology (including bacteriology).** Lectures and laboratory work. Credit IV. 2 points. Professor BROADHURST and assistant

This half-year course requires (1) one lecture hour, (2) one demonstration and recitation hour, and (3) one two-hour laboratory period

8:30 a. m.—12:20 p. m., Saturday, Winter Session, Room 423 T. C. Fee \$12. For the convenience of part-time students, the lectures, laboratory work and demonstrations are all given on the same day

Limited section. Requires fifteen students

This course deals with bacteria, molds, yeasts, and other micro-organisms, selecting for most attention the forms which affect everyday life. The bacteriological problems of personal and public hygiene and sanitation are included. Many of the studies directly involve important problems of home economics.

Prerequisite: Elementary biological laboratory study.

*Chemistry*

(For general chemistry, see pp. 38-40)

**\*P. A. Chemistry e3—Brief course for beginners in household arts.** Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss FRANCIS and Miss HONEYWELL

\*A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

Section I—9-11:50 a.m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session. Room 400 T. C.

Section V—9-11:50 a. m., Wednesday and Saturday, Winter Session

Each section requires fifteen students

An abbreviated course for students beginning the study of cookery, nutrition, or household administration. If students who take this course later wish to enter Chemistry 31 or 41, they must complete Chemistry 5.

\* **P. A. Chemistry e3a-3b**—Section III-IV of the above course. 4 points for the year. Fee \$16 each Session. Requires fifteen students.

7:20-10 p. m., Tuesday

Room 400 T. C.

This section is an adaptation of the above course intended especially for nurses or those who intend to study nursing and who wish a beginning course in chemistry.

\* **P. A. Chemistry e25—Food industries.** Lectures, readings and demonstrations, varied with excursions to manufacturing establishments and reports on the processes inspected. Credit IV. 3 points. Fee \$18. Professor VULTÉ and Miss VANDERBILT

Section I—10-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session

Section III—10-11:50 a. m., Monday and Friday, Winter Session. Repeated as Section IV—Spring Session

Room 400 T. C.

Each section requires fifteen students

The lectures describe the preparation of the various staple foods, from the raw state to the finished product in marketable form and include a discussion of the composition and cost of the available materials. Among the various subjects considered are the cereals, flours, meals, starch, bread, sugars, meats, edible oils, dairy products, tea, coffee, chocolate, alcoholic beverages, spices and condiments. The processes of drying, salting, smoking, canning and preserving are described. Adulteration and substitution are also considered.

Prerequisite or parallel: A course in general chemistry.

\* **P. A. Chemistry e31L—Household and organic chemistry.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Professor VULTÉ, Miss VANDERBILT, and Mrs. MCGOWAN

Section I—9-11:50 a. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

Section IV—9-11:50 a. m., Tuesday and Thursday, Spring Session

Section V—9-11:50 a. m., Wednesday and 2:10-5 p. m., Friday, Winter Session. Repeated as

Section VI—Spring Session

Limited sections.

Each section requires fifteen students

Room 405 H. A.

This course includes (1) laboratory study of composition, properties and purification of water; effect of various cooking utensils on food products; economy of fuels; carbohydrates, testing of flour, meals, cereals, fruits, and similar products; fats, soap-making, soap powders,

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.



scouring agents and polishes; proteins, examination of eggs, meat extracts, gelatine, milk and cheese; baking powders; tea, coffee, and cocoa; (2) lectures, demonstrations, and recitations on important organic compounds of the aliphatic and aromatic series, such as hydrocarbons, alcohols, aldehydes, ketones, acids, esters, amines, amides, amino acids, purin bases, etc.

Prerequisite: General chemistry equivalent to Chemistry 1-2. Chemistry 25 is a desirable supplement.

**\* P. A. Chemistry e31A.** Credit IV. 4 points. A modification of Chemistry 31 for students in household administration and others desiring a general survey of household chemistry and physics. Miss FRANCIS

2:10-5 p. m., Monday and Wednesday, Spring Session. Room 405 H. A. Special fee \$32. Not charged at \$6 per point

Requires fifteen students

Prerequisite: Chemistry e3A or eA. This course does not admit to more advanced courses in chemistry unless the student has completed the equivalent of Chemistry eA1-A2.

## FINE ARTS

### *Art Appreciation and History*

**\* Fine arts e69-70—Art appreciation. History of art.** Lectures and required reading. Credit IV. 2 points each Session. Professor DOW (69), Miss BLISS, Miss DEMENT, Mr. MARTIN, and others (70)

4:10-5:30 p. m., Tuesday. Horace Mann Auditorium. Fee \$12 each Session

Appreciative study of painting, sculpture, architecture and design, in historical development. Lantern illustrations.

First part of course: nature of space arts, principles common to them all; art structure, composition of line and mass, color-theory, art criticism.

In the historical study, general chronological order is followed, but facts as to dates and periods are to be derived from the text-book, Reinach's *Apollo*. Reading is tested by written exercises. Illustrated reports of work in museums and libraries will be required.

### *Art Structure*

**\* Fine arts e1—Art structure A.** For teachers, designers, illustrators, craftsmen and painters. Lectures and studio work. Credit IV. 3 points. Fee \$18. Professors DOW and CORNELL, Miss TANNAHILL and Miss NORTHRUP

Section I—9-11:50, Monday and Wednesday, Winter Session

Section II—2:10-5, Tuesday and Thursday, Spring Session

Section III—9-11:50, Tuesday and Thursday, Winter Session. Room 430 Macy

Section IV—9-11:50, Monday and Wednesday, Winter Session. Room 507 H.A.

An evening class will be organized for Monday, Wednesday, and Friday evenings, 8-10, Winter Session, if twenty-five students apply

The courses in art structure stand for (a) *freedom*—to use *line, mass, color*; (b) *power*—to appreciate fine qualities of proportion, arrangement and color, and to obtain these qualities in creative art work.

Outline: 1. Principles of art—how lines, masses, colors may be put together to produce fine quality—spacing, rhythm, grouping. 2. Original design—choosing and combining lines, masses, colors. Exercises with brush and ink, charcoal, colored crayons, watercolor. Position of body, breathing, control of hand, freedom of movement, power in execution. Study of masterpieces. 3. Use. Applications in painting, illustrating, designing, modeling and handicraft.

Reading, DOW's *Composition and Theory and Practice of Teaching Art*.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

**\* Fine arts e2—Art structure B.** Continuation of Fine Arts I. Lectures and studio work. Credit IV. 3 points. Fee \$18. Professor CORNELL, Miss TANNAHILL, and Miss NORTHRUP

Section I—9-11:50, Monday and Wednesday, Spring Session

Section II—9-11:50, Tuesday and Thursday, Spring Session. Room 430 Macy

Section III—9-11:50, Monday and Wednesday, Spring Session. Room 507 H. A.

An evening class will be organized for Monday, Wednesday, and Friday evenings, 8-10, Spring Session, if twenty-five students apply

Room 430 Macy

Principles of composition: line and dark-and-light harmonies in pattern, lettering and landscape; how to study color; harmony of colors in design, pictures, costumes, printing, the home. Study of historic examples, primitive art, Japanese art. Special study, under guidance, of museum art collections.

Applications in decoration, illustration, painting, hand work and occupations.

Reading as in Fine Arts I, also Day's *Pattern Design*, Johnston's *Writing, Illuminating and Lettering*.

Prerequisite: Fine Arts I. Design or drawing in other schools cannot be accepted as equivalent of Fine Arts I or 2.

**\* Fine arts e3—Freehand drawing.** Credit IV. 2 points. Fee \$12. Mr. MARTIN

Section I—2:10-4 p. m., Tuesday and Thursday, Winter Session

Section III-IV—Wednesday, 4:10-6 p. m., throughout the year. (Register for Fine arts e3a and e3b below.)

Each section requires fifteen students

Outline, relief, light and shade. Perspective. Drawing from still life, flowers and casts; landscape sketching. Charcoal, brush, pencil. Copying of masters' drawings. Assigned reading.

**Fine arts e3a-3b—Section III-IV of above course.** 2 points for the year. Fee \$6 each Session

4:10-6 p. m., Wednesday

**Fine arts e49-50—Art structure Ca.** Lectures and studio work. 1½ points each Session. Professor DOW and Miss TANNAHILL

Not given in 1918-1919

Three hours outside work per week

An abridged course in theory and principles of art. (See Fine Arts e1, 2, 51-52.) For teachers, designers, illustrators, craftsmen, and painters.

Exercises in composition. Brush drawing and painting; charcoal studies; color in theory and practice. Assigned reading and museum work.

**\* Fine arts e75—Lettering.** Credit IV. 3 points Spring Session. Miss TANNAHILL

2:10-5 p. m., Tuesday and Thursday. Fee \$18

Requires fifteen students

Lectures and studio work. Art in lettering. Ancient and modern lettering. Reed-pen, steel pen, brush, and stick lettering. Designing of posters, cards, title-pages, inscriptions and illuminations. Designing for war service. Engraving on linoleum or wood, and printing of selected designs.

Reading, Day's *Pattern Design*; Johnston's *Writing, Illuminating, and Lettering*; Dow's *Composition*.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

Prerequisite: Fine Arts 1. Design or drawing in other schools cannot be accepted as equivalent of Fine Arts 1 or 2.

**\* Fine arts 25-26—Clay modeling and pottery.** 2 points each Session. Special fee \$16 each Session. Not charged at \$6 per point. Mr. UPJOHN

Section I—3:10-5 p. m., Wednesday and Friday

Section II—2:10-4 p. m., Tuesday and Thursday

Section III—10-11:50 a. m., Tuesday and Thursday

Each section requires fifteen students

Clay-Modeling: Modeled and incised tiles and panels. Mouldings and medallions in low and high relief. Sketching of small figures in clay. Modeled heads, from casts. Colored relief, casting in plaster. Mould-making—one-piece, chip-and-piece, and gelatine moulds.

Pottery: Making of shapes. Coiling, building, pressing, casting. Making of pottery moulds. Decoration with underglaze colors. Sprigging, biscuit-firing, glazing and gloss firing.

Reading, Knowlton's *Hints on Sketching from Nature*; Ross' *Drawing and Painting*.

Prerequisite: Fine arts 3 or equivalent.

**\* Fine arts e53-54—Drawing and painting.** Credit IV. 2 points each Session. Special fee \$16 each Session. Not charged at \$6 per point. Mr. MARTIN

Section I—9-10:50 a. m., Tuesday and Thursday

Section II—2:10-4 p. m., Wednesday and Friday

Each section requires fifteen students

Expression by line, modeling in line, shading, gradation, values, perspective, modeling in tone, technique of charcoal. Painting in oil and water color, figures, animals, landscapes. Copying in museums.

Reading, Knowlton's *Hints on Sketching from Nature*; Ross' *Drawing and Painting*.

Prerequisite: Fine arts 3 or equivalent.

**\* Fine arts e53a—Drawing and painting.** Credit IV. 1 point. Mr. MARTIN (Not given in 1918-1919, see Fine Arts e54a.)

Freehand drawing in charcoal and pencil from objects, cast, still life and costumed figure.

Shading, gradation, values, texture, and tone-modeling. Painting in oil and water color.

**Fine arts e54a—Advanced drawing and painting.** Credit IV. 2 points. Special fee \$16. Not charged at \$6 per point. Mr. MARTIN

9-10:50 a. m., Saturday, throughout the year. Room 435 Macy

Requires fifteen students

Prerequisite: Fine arts e53a.

Fine arts e54a alternates with e53a.

**Fine arts e81a-82a—Art structure Da.** Lectures and studio work. Credit IV. 1½ points each Session. Special fee \$12 each Session. Not charged at \$6 per point. Professor DOW and Miss TANNAHILL (e81a), Miss TANNAHILL (e82a)

9-11:50 a. m., Saturday. Room 430 Macy

Three hours outside work per week

Requires fifteen students

An advanced course in composition, with applications in designing and hand work. For teachers of occupations, designers, illustrators, craftsmen and painters. Brush drawing. Painting in flat tones. Charcoal studies. Landscape composition. Color. Wood block printing. Stencilling. Copying in museums. Assigned reading.

Prerequisite: Fine arts e49-50 or 51-52.

Fine arts e81a-82a alternates with e49-50.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration and written permission obtained.



**\* Fine arts e83-84—Painting.** Credit IV. 4 points each Session. Special fee \$32 each Session. Not charged at \$6 per point. Professor BEMENT

9-11:50 a. m., Monday, Wednesday and Friday. Room 426 Macy

Drawing and painting from life, costumed model. Compositions of figures and landscapes for mural painting and illustration. Portrait and landscape painting. Copying in museums. Studio and outside work.

Reading, Vanderpoel's *The Human Figure*.

Prerequisites: Fine arts 51-52, 53-54, or equivalents.

**\* Fine arts e83a-84a—Painting.** 1½ points each Session. Special fee \$12 each Session. Not charged at \$6 per point. Professor BEMENT

9-11:50 a. m., Saturday, Room 426 Macy

Requires fifteen students

Still life painting, landscape painting, work from costumed model.

Advanced course following Fine arts e49-50 and e53a-54a.

**\* Fine arts e93-94—Life class for women.** Credit IV. 3 points each Session. Professor BEMENT

9-11:50 a. m., Monday, Wednesday and Friday, Room 426 Macy. Special fee \$24. Not charged at \$6 per point.

Open only to those who have satisfactorily completed Fine arts 53-54.

Drawing and painting from living model. Two criticisms per week.

**Fine Arts e97-98—Figure construction.** 2 points each Session. Special fee \$16 each Session. Not charged at \$6 per point. Professor BEMENT

2:10-5 p. m., Wednesday

Requires fifteen students

A course in drawing and sketching the human figure, adapted to the requirements of students in Costume Design.

Reference books: Rimmer's *Anatomy*; Vanderpoel's *The Human Figure*; Poynter's *Drawings*.

### *House Design*

**Fine arts e11—Art structure E.** Lectures and studio work in preparation for house design. 3 points. Fee \$18. Professor DOW and Mr. MEEKER

Section I—9-11:50 a. m., Tuesday and Thursday, Winter Session

Section II—9-11:50 a. m., Tuesday and Thursday, Spring Session

Section III—2:10-5 p. m., Tuesday and Thursday, Winter Session

Room 505 H. A.

Requires fifteen students

General principles of art structure—space filling, line harmony, composition of pattern, distribution of dark-and-light in a space, tone values and contrast, color arrangement. Illustrations from historic art and from modern design. Exercises with brush and ink, charcoal, colored crayons, water color. Copying in museums.

Applications (suggested) in house design and home furnishing.

Reading, see under Fine arts 1.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

**Fine arts e14—Home furnishing.** Lectures and studio work. 3 points. Fee \$18. Mrs. ACKERMAN and Mr. MEEKER  
9-11:50 a. m., Monday and Friday, Winter Session  
Requires fifteen students

Studies in art structure and design in relation to the furnishing of the home. Good spacing and arrangement, leading lines, rhythmic lines, light-and-dark spaces, color combinations and schemes. Simple exercises with charcoal, brush and crayon. Excursions to museums, studios and shops.

Assigned reading.

**Fine arts e41—Art structure F.** Continuation of Fine arts 11. Lectures and studio work. 3 points. Fee \$18. Professor DOW and Mr. MEEKER  
2:10-5 p. m., Tuesday and Thursday, Spring Session  
Requires fifteen students  
Room 505 H. A.

Advanced art structure with applications in house design. Principles of composition, scales of tones, theory of color, harmony of color, mixing of colors. Designs for furniture, metal fixtures, textiles, embroidery, rugs, and articles for home use. Studies of museum collections and of modern design.

Assigned reading.

Prerequisite: Fine arts 11 or 1.

**Fine arts e57-58—Furniture design.** 1½ points each Session. Fee \$9 each Session. Mr. MEEKER and furniture experts  
9-11:50 a. m., Saturday, Room 505 H. A.  
Requires fifteen students

Designing of furniture, both simple and elaborate, including a series of projects suitable for the secondary school.

Prerequisites: Fine arts 1, 2 (or 11, 41) Drawing 3-4.

**Fine arts 80—Home furnishing.** Lectures, readings and reports. 4 points. Fee \$24. Mrs. ACKERMAN and special lecturers  
9-11:50 a. m., Tuesday and Thursday, Spring Session. Room 101 H. A.  
Requires fifteen students

Development of the house, artistic and practical. Each phase will be presented by an expert. The materials to be used will be studied in three ways, (a) contact, (b) observation, (c) illustrated lectures.

Prerequisites: Fine arts 1, 2 (or 11, 41) 3, Drawing 3-4.

### *Costume Design*

**Fine arts e21—Costume design.** Credit IV. 3 points. Miss WILMOT. Fee \$18

Section I—9-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session

For Saturday section (V) register for Fine arts e21a-e21b below

Each section requires fifteen students

**Fine arts e21a-e21b.** Same as e21. Fee \$9 each Session. Miss NORTHRUP  
9-11:50 a. m., Saturday, throughout the year. Room 507 H. A.

Design in costume; rhythm of line; harmonies of tone. Sketching gowns and hats; original designs for gowns and hats for various types. Pencil, water color, colored chalks. For teachers in household arts education and in costume design, and for professional designers.

Prerequisites: Fine arts 1 or 11 and Clothing 33.

**Fine arts 181x—Design for school and community festivals.** 1 point.  
 Fee \$6. Miss NORTHROP  
 4:10–6 p. m., Friday, Winter Session  
 Requires fifteen students

Simplified art course for those who expect to take part in festivals or plays. Color harmonies and designs for stage setting and costumes. Stencilling, wood block printing, tie dyeing. Study of psychological effects of color. Work on Teachers College Festival.

### *Art Industries*

**\* Fine arts e31-32—Design in the art industries.** Lectures and studio work. Credit IV. 3 points each Session. Professor DOW and Mr. THATCHER  
 9–11:50 a. m., Monday and Wednesday, Room 435 Macy. Fee \$18 each Session  
 Requires fifteen students

Instruction in principles and practice of design. Training for professional designers and craftsmen. Drawing with brush and ink. Painting in fresco and water color. Line design and space filling. Tone and masses. Color theory, color scheming. Original design with special work in block printing and stencilling.

Reading, Dow's *Composition*, Day's *Ornament and Its Application and Pattern Design*, Hicks' *The Craft of Handmade Rugs*, Hooper's *Handloom Weaving*.

**\* Metalworking e1—Hammered metal.** Credit IV. 2 points Winter Session. Special fee \$16. Not charged at \$6 per point. Mr. THATCHER  
 9–10:50 a. m., Tuesday and Thursday, Rooms 26 and 243 Macy  
 Requires fifteen students

Instruction in hammered and raised work. Processes include forming of bowls, trays, boxes, candlesticks, furniture fittings and other shapes, and their enrichment by repoussé; coloring of metals by patinas. Design is required in planning the projects.

Students should elect Fine arts 1 parallel, and if possible Fine arts 31–32.

**\* Metalworking e4—Special course for war service.** 2 points. Special fee \$16. Not charged at \$6 per point. Mr. THATCHER  
 9–10:50 a. m., Tuesday and Thursday, Spring Session  
 Requires fifteen students

Making, from used tin cans, of articles for home, camp, and hospital. Simple, strongly made toys—locomotives, cars, steam rollers, automobiles, trucks, boats, etc. Camp equipment—cooking pails, coffee pots, cups. Decorative objects, lanterns, candlesticks, boxes. Also, making of simple articles in copper and brass.

In all this work, the most primitive tools can be used, costing not over \$3.50.

**\* Metalworking e5-6—Jewelry.** Shopwork. Credit IV. 2 points each Session. Fee \$12 each Session. Mr. THATCHER  
 Section I—2:10–4 p. m., Monday and Wednesday  
 Section II—4:10–6 p. m., Monday and Wednesday  
 Each section requires fifteen students  
 Rooms 26 and 243 Macy

Instruction in making buckles, fobs, chains, necklaces, pendants, rings, setting of stones, casting of silver; polishing and finishing of metals; coloring by chemical and electrolytic methods. Design is required in planning projects. Part of the course has been simplified and rearranged for students in Occupation Therapy.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.



Prerequisites for Sections I and II: Metalworking 1, 2; and a design course, which may be taken parallel.

### *Art Photography*

**\* Fine arts e7-8—Art photography I.** Lectures and laboratory work. Credit IV. 2 points each Session. Mr. WHITE

4:10-6 p. m., Wednesday, and 9-10:50 a. m., Saturday, Room 325 T. C. Extra hours desirable but optional. Special fee \$16 each Session. Not charged at \$6 per point.

Begins October 2. Requires fifteen students

Application of art to photography, and instruction in the use of the camera. Field and laboratory work, developing, printing and mounting.

Practice in the use of the camera in the field and in the studio on Saturday mornings.

Recommended preparatory: Fine arts 1, 2.

**\* Fine arts e37-38—Art photography II.** Lectures and laboratory work. Credit IV. 2 points each Session. Mr. WHITE

4:10-6 p. m., Thursday, and 9-10:50 a. m., Saturday, Room 325 T. C. Extra hours desirable but optional. Special fee \$16 each Session. Not charged at \$6 per point. Begins October 3. Requires fifteen students

Making negatives, positives and enlarged negatives, the manipulation of negatives and printing papers. Coating of papers. Photography in landscape, architecture, illustration and portraiture. Mounting and framing. Lantern-slide making for lecturers.

Practice will be offered in the use of the camera in the field and in the studio on Saturday mornings and at other times in the studio by appointment.

Prerequisite: Art photography I or equivalent.

### *Mechanical Drawing*

Certain specially applied courses in mechanical drawing offered in the School of Practical Arts are open to Extension students who have completed the courses described in the annual Announcement. See the *Announcement of the School of Practical Arts* and consult the Director of that School.

Other and more advanced courses in fine arts described in the *Announcement of the School of Practical Arts* may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor Dow.

## HOUSEHOLD ARTS

(See Cookery (p. 108), Nutrition and Food Economics (p. 112), Textiles and Clothing (p. 113), Household Arts—Fine Arts (p. 102), Household Administration (p. 117).

### *Problems of the Home in War Times*

A series of short extension special courses of immediate value to mothers and other home-makers will be conducted by Teachers College, November, 1918, to May, 1919.

The general topics of these courses will be: conservation and thrift; care and

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration and written permission obtained.

training of children under present conditions; relation of the home to the community, including civics, citizenship, and volunteer service for women.

A circular giving detailed information may be obtained in September by applying to the Secretary of Teachers College, Columbia University.

### *Cookery*

The classes in cookery meet in Rooms 201-214 Household Arts Building, Teachers College.

*Costume* for foods and cookery laboratories: Students are requested to wear white cotton clothing; plain skirt; tailored waist; plain white collar; no color in ties or bows of neckwear; long plain white apron with bib (for laboratory only); little, if any jewelry.

*Limited sections:* For all 'limited' courses (indicated by **L** following the number, e. g., **Cookery e2L**) students must reserve places before completing registration. See p. 99.

Any limited section with less than fifteen students may be discontinued after the first lesson.

**Cookery e1—Technology of cookery.** Lectures, demonstrations and laboratory work. Credit IV. 2 points. Fee \$12. Professor VAN ARSDALE, Miss STONE, Miss MONROE, and Miss COLMAN

Section I—1:10-2 p. m., Monday, Wednesday and Friday, Winter Session. Repeated as

Section II—Spring Session

Section III—1:10-2 p. m., Tuesday, Wednesday and Thursday, Winter Session

Each section requires fifteen students

The purpose of this course is to develop skill in the technique of cookery by means of a systematic introduction to the principles, processes and food materials involved.

This course is prerequisite or parallel to all courses in cookery.

Students are advised to take general chemistry and physics parallel.

\* **Cookery e2L—Elements of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Mrs. GUNN

Section I—2:10-5 p. m., Monday and Wednesday, Winter Session. Repeated as

Section II—2:10-5 p. m., Tuesday and Thursday, Spring Session

Each section requires fifteen students. Limited sections

This course is for students of household administration, nursing and health, teachers of home-making, and others not majoring in foods and cookery. It includes a general survey of the elementary principles of cookery, with an introduction to planning and serving meals in the home. Elementary chemistry, physics and biology are desirable preliminary or parallel courses. This course does not satisfy the prerequisites for other courses of cookery, unless so stated in the announcement, nor may it be credited in addition to Cookery 3 or 4I.

Cookery 1 is a desirable parallel.

\* **Cookery e3L—Principles of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss PEACOCK, Miss FRAME, and Miss STONE

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

Section IX-X—Saturday, throughout the year. (Register for Cookery e3a and e3b below)

Section XI—7-9:50 p. m., Monday and Wednesday, Winter Session. Begins September 30

Limited sections. Each section requires fifteen students

The purpose of this course is to give a working knowledge of the general principles of cookery. Prerequisite or parallel: General chemistry and Cookery 1.

**Cookery e3a-3bL**—Section IX-X of above course. Credit IV. 3 points for the year. Special fee \$12 each Session

9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 28

\* **Cookery e41L—Home cookery and table service.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Mrs. GUNN and Miss FRAME

Section VII-VIII—Saturday, throughout the year (Register for Cookery e41a and e41b below)

Section X—7-9:50 p. m., Monday and Wednesday, Spring Session. Begins February 10.

Limited sections. Each section requires fifteen students

The purpose of this course is to give opportunity for practice in home cookery. It will include the study, planning, and cooking of breakfasts, luncheons, dinners and suppers; and various methods of preparation and garnishing. It is intended for students who are planning to teach or to take charge of families where such work is required. It deals also with table service.

Prerequisite: Cookery 3.

Prerequisite or parallel: Cookery 1, Chemistry 25 and Biology 4. Nutrition 1 is strongly recommended as a parallel. Administration 21 is also recommended.

**Cookery e41a-41bL**—Section VII-VIII of above course. 2 points each Session. Special fee \$16 each Session

9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 28

\* **Cookery e61—Lecture—demonstrations in the new cookery.** Credit IV. 3 points. Fee \$18. Miss SHAPLEIGH

Section I—9-11:50 a. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

Each section requires fifteen students

This course is intended to acquaint the student with the more complicated processes of cookery, more elaborate utensils, and a greater variety of flavorings, seasonings and food materials. Special emphasis will be laid upon the use of a wide range of food materials and a comparison of new and old standards.

Prerequisite or parallel: Cookery 1.

Prerequisite: Cookery 3 and 41 or equivalents.

\* **Cookery e75L—Large quantity cookery.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss GUILFORD and associates

Section III—7-9:50 p. m., Monday and Wednesday, Winter Session. Repeated as Section IV—Spring Session. Begins September 30 and February 10

Limited class. Each section requires fifteen students

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.



This course is designed to give practice in handling materials in large quantities for the large family or for small and large institutions, as hospitals, sanitarium, college dormitories, restaurants, etc. The course will include some practice in planning and serving of luncheons of varying costs to small groups as an introduction to larger work. The problem of minimum cost luncheons will be considered with reference to the demands of the cafeteria, the factory, and the school.

Prerequisites: Cookery 3, 4 and 41. Parallel: Courses in Administration and Nutrition.

**\* Cookery e81L—Practice in demonstration cookery.** 3 points. Fee \$24. Not charged at \$6 per point. Miss SHAPLEIGH and Miss BARROWS  
Section I—9-11:50 a. m., Tuesday and Thursday. Repeated as  
Section II—Spring Session  
Limited sections. Each section requires fifteen students

This course aims to give practice for public lecture and demonstration for extension workers.  
Prerequisite for extension students: experience in teaching cookery and nutrition.

**Cookery e90—History of cookery.** Credit IV. 2 points. Fee \$12. Miss SHAPLEIGH  
Section I—1:10-3 p. m., Friday, Winter Session. Repeated as  
Section II—Spring Session  
Each section requires fifteen students

**Cookery e42L—Elementary cookery.** No credit. Special fee \$30. Not charged at \$6 per point. Miss FRAME  
Section I—9-11:50 a. m., Tuesday and Thursday, Winter Session. Begins October 3. Repeated as  
Section II—9-11:50 a. m., Monday and Wednesday, Spring Session. Begins February 10  
Room 206 H. A.  
Limited sections. Each section requires fifteen students

**Cookery e48L—Advanced cookery for the changing conditions.** No credit. Special fee \$36. Not charged at \$6 per point. Professor VAN ARSDALE, Mrs. GUNN, and associates  
Section I—2:10-5 p. m., Tuesday and Thursday, Winter Session. Begins October 3. Repeated as  
Section II—Spring Session. Begins February 11  
Limited sections. Each section requires fifteen students

This course will deal with the general principles of Food Thrift as set forth by the changing economic conditions and will give laboratory practice in the use of 'substitutes' in home cookery. It will deal also with Food Preservation such as canning, drying, pickling, etc.

Prerequisite: Cookery e42 or equivalent.

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Other and more advanced courses in Cookery, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor VAN ARSDALE

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

*Nutrition and Food Economics*

**\* Nutrition e1—Elementary food economics.** Lectures, recitations and laboratory work. Credit IV. 2 points. Fee \$12. Miss McCORMICK, Miss BARTO and Professor SHERMAN

Section I—9-11:50 a. m., Saturday, Winter Session. Repeated as  
Section II—Spring Session

Rooms 400 Teachers College and 401 H. A.

Each section requires fifteen students

This is an elementary course designed for students who have not taken the science courses which are a prerequisite to Nutrition 71. It includes discussion of the functions and nutritive values of foods, the feeding of families and larger groups, with particular reference to nutritive requirements and the cost of food in relation to the family budget.

Prerequisites: An elementary knowledge of cookery equivalent to Cookery 3. Students who have not previously studied chemistry are strongly advised to take Chemistry 1 or 3A in the Winter Session as preparation for this course in the Spring Session.

*Textiles and Clothing*

*Limited sections:* For all courses announced as 'limited sections' students must reserve places at the time of registration. See p. 99.

**\* Textiles e31a—Textiles.** Lectures. Credit IV. 2 points. Fee \$12. Professor FALES

Section I—10-10:50 a. m., Tuesday and Thursday, Winter Session.  
Room 418 T. C.

This course considers the primitive form of the textile industries in order to make clear their later development; the present methods of carding, spinning and weaving; the modern manufacture and finishing of cotton, wool, silk, linen and other important fibers, and their properties and values in relation to their manufacture. This course may be elected separately but is prerequisite to the other parts of the course.

**\* Textiles e31b—Textile fabrics.** Lectures and laboratory work. Credit IV. 1 point supplementary to other textile work. Fee \$6. Professor FALES and Miss BALDT

Section I—10-11:50 a. m., Wednesday, Winter Session. Repeated as  
Section II—Spring Session  
Room 302 H. A.

This course concerns itself with the identification and grading of textile materials, their names, kinds, prices and widths; considers variation of weave in regard to beauty and strength; the use and value of cotton, silk, wool and linen for clothing and household furnishing.

Prerequisite: Textiles 31a.

**\* Textiles e31c—Textile chemistry.** Laboratory work. Credit IV. 1 point supplementary to other textile or clothing work. Special fee \$8 each Session. Not charged at \$6 per point. Mrs. MCGOWAN

Section I—2:10-4 p. m., Wednesday, Winter Session. Repeated as  
Section II—Spring Session

Section III—10-11:50 a. m., Wednesday, Winter Session. Repeated as  
Section IV—Spring Session

Room 509 H. A.

Limited sections. Each section requires fifteen students

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

This course considers (a) the identification of fibers and substitute material by means of the microscope; (b) the chemical examination of fibers including tests to determine content of cloth and adulteration, and proper use of materials in relation to cleansing and laundering; (c) lectures, and laboratory experiments in dyeing.

Prerequisites: Textiles 31a, Chemistry 3 or its equivalent.

**Textile manufacturing**—See under Industrial arts, p. 120

**\*Clothing e33—History of costume.** Lectures, Credit IV. 2 points. Fee \$12. Professor FALES

Section I—11-11:50 a. m., Tuesday and Thursday, Winter Session

This course includes a survey of ancient Egyptian, Grecian, early and modern French costumes. It aims to give practical information for the use of students and teachers of dress-making, costume design and fashion illustration.

**\*Clothing e5L—Elementary clothing and handwork.** For teachers. Laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss WHITE and Miss EVANS

Section III—9-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as

Section IV—Spring Session.

Section IX—X—Saturday, throughout the year. Begins September 28. (Register for e5a-5bL below)

Limited sections. Each section requires fifteen students. Room 301 H. A.

This course includes practice in the following: the use of the sewing machine and its attachments; the making of fundamental stitches; the drafting and use of patterns; hand and machine sewing applied to simple garments; knitting, crocheting, darning, patching and simple embroidery.

Students provide required material.

This course, or its equivalent, is prerequisite to all dressmaking courses.

Parallel or prerequisite: Fine arts I or II.

**\*Clothing e5a-5bL—Section IX-X of Clothing 5.** Credit IV. 4 points for the year. Special fee \$16 each Session. Not charged at \$6 per point. 9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 28

**\*Clothing e15L—Drafting and dress design.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24 each Session. Not charged at \$6 per point. Miss BALDT

Section III—2:10-5 p. m., Monday and Friday, Winter Session. Repeated as Section IV—Spring Session

Section IX—X—Saturday, throughout the year. Begins September 28. (Register for e15a-15bL below)

Limited sections. Each section requires fifteen students. Room 305 H.A.

This course gives practice in the making of patterns by drafting, modeling and designing. Foundation patterns of a shirtwaist, shirtwaist sleeve, skirt, fitted waist, fitted sleeve and kimono blouse are drafted to measure, in materials and fitted. From these other patterns are designed and modeled in paper, cambric and cheesecloth. Good design is emphasized.

Students provide required materials; approximate cost, \$5.

This course is prerequisite to all other dressmaking courses.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.



\* **Clothing e15a-15bL.** Section IX-X of Clothing 15. Credit IV. 3 points for the year. Special fee \$12 each Session. Not charged at \$6 per point  
9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 28

\* **Clothing e35L—Dressmaking, elementary.** For teachers. Laboratory work. Credit IV. 4 points. Special fee \$32 each Session. Not charged at \$6 per point. Miss BALDT

Section I—9-11:50 a. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

Also eight evening lessons. See Clothing e35x below

Room 304 H. A.

Limited sections. Each section requires fifteen students

This course includes eight evening tailoring demonstrations, and the cutting and making of a simple wash dress, a tailored silk shirt, a wool skirt, a lingerie blouse, and a net guimpe. Commercial patterns as well as those made and fitted in Clothing 15 are used.

Students provide required material; approximate cost, \$25.

Prerequisites: Clothing 5, 15. Fine arts I or II.

\* **Clothing e35a-35b—Dressmaking, elementary.** For teachers. Laboratory work. Credit IV. 3 points for the year. Special fee \$12 each Session. Not charged at \$6 per point. Miss BALDT

9-11:50 a. m., Saturday, Winter and Spring Sessions

Begins September 28

Requires fifteen students. Room 304 H. A.

**Clothing e35x—Tailoring demonstrations.** For teachers. Laboratory work. Credit IV. 1 point. Special fee \$8. Not charged at \$6 per point. Mr. GROSS

Section I—7:30-9:30 p. m., Tuesday and Thursday beginning November 14.

Repeated as

Section II—Beginning March 6

Each section requires fifteen students

**Clothing e41L—Dress design.** For teachers. Demonstrations, discussions and lectures. Credit IV. 1 point supplementary to other textiles and clothing work. Fee \$6. Miss EVANS

Section I—12-12:50 p. m., Saturday, Winter Session. Begins September 28.  
Room 301 H. A.

Requires fifteen students

This course includes demonstrations in draping blouses, skirts, and one-piece dresses.

\* **Clothing e45L—Dress design.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss WILMOT and Mrs. NELSON

Section I—2:10-5 p. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

Section IX-X—Saturday, throughout the year. Begins September 28. (Register for e45a and e45b below)

Limited sections. Each section requires fifteen students. Room 305 H. A.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration and written permission obtained.

This course gives practical training in the application to costume of line, color harmony, dark and light, and texture. Historic costume is used as a source of inspiration for much of the work. Practice in using and adapting for different individuals and purposes designs from the current fashion magazines. All designing is done from patterns made in Clothing 15, and by modeling on the form to give practice in actual constructive design.

Students provide required materials; approximate cost, \$5.

Prerequisite: Clothing 5, 15, 33, 35 and Fine arts 1.

\* **Clothing e45a-45b**—Section IX-X of Clothing 45. Credit IV. 3 points for the year. Fee \$12 each Session. Not charged at \$6 per point.

9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 28

\* **Clothing e65—Embroidery.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24 each Session. Not charged at \$6 per point. Miss WHITE 2:10-5 p. m., Monday and Friday, Spring Session

Room 301 H. A.

Requires fifteen students

This course includes practice in various kinds of embroidery—French embroidery for under-wear, lingerie waists and household linen; dress embroideries in white and colors and various specialized embroideries. Students provide certain materials subject to the approval of the instructor.

\* **Clothing e27—Millinery, elementary.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Mrs. TOBEY Section III—9-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as

Section IV—Spring Session

Room 302 H. A.

Each section requires fifteen students

This course includes practice in the making and covering of frames and in the preparation of trimmings, such as wiring bows, shirrings, puffings, milliners' folds. Students provide material subject to the approval of the instructor.

**Clothing e55L—Dressmaking, intermediate.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss HALLETT

Section V—9-11:50, Monday, Tuesday, Wednesday, Thursday, Friday, second half of Winter Session. Repeated as

Section VI—Second half of Spring Session

Section IX-X—Saturday, throughout the year. Begins September 28 (Register for e55a-55b below)

Limited sections. Requires ten students

This course gives practical experience in shop work. Ready-to-wear garments are made and orders are executed under the direction of an experienced shop worker.

Prerequisites: Clothing 5, 15, 35.

**Clothing e55a-55b**—Section IX-X of Clothing 55. Credit IV. 3 points for the year. Fee \$12 each Session

9-11:50 a. m., Saturday. Winter and Spring Session. Begins September 28

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

**Textiles e1—Textile economics and design.** For teachers. Lecture work. Credit IV. 1 point supplementary to other textile or clothing work. Fee \$6. Miss EVANS

Section II—12-12:50 p. m., Saturday. Spring Session. Room 301 H. A. Begins February 8

Requires fifteen students

In this course a study of textiles is made from the standpoint of economics, texture and color.

### *Courses for Home Workers*

**Clothing e1L—Sewing, elementary.** Laboratory work. Fifteen three-hour lessons. No credit. Fee \$15. Miss EVANS

Section I—9-11:50 a. m., Wednesday, Winter Session. Begins October 9. Repeated as

Section II—Spring Session. Begins February 12.

Room 301 H. A.

Limited sections. Each section requires fifteen students

This course includes practice in hand and machine sewing and in the cutting, fitting and making of undergarments. Students provide required materials.

**Clothing e11L—Children's clothes.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$15. Miss EVANS

Section I—10-11:50 a. m., Tuesday and Thursday, Winter Session. Begins October 8. Repeated as

Section II—Spring Session. Begins February 11. Room 509 H. A.

Limited sections. Each section requires fifteen students

This course includes practice in cutting and making children's dresses, smocks, rompers, undergarments, etc. Students provide required material.

**Clothing e21L—Costume accessories.** Laboratory work. Fifteen three-hour lessons. No credit. Fee \$15. Mrs. NELSON

Section I—9-11:50 a. m., Wednesday. Winter Session. Begins October 9. Room 311 H. A.

Limited sections. Requires fifteen students

This course includes the making of bags, belts, scarfs, and cuffs and collar sets. A few lessons will be devoted to dyeing for embroidery, batik, and tie-dyeing for scarfs, etc.

**Clothing e31L—Dressmaking.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$15. Miss EVANS

Section I—10-11:50 a. m., Monday and Friday, Winter Session. Begins October 7. Repeated as

Section II—Spring Session. Begins February 10

Section III—2:10-4 p. m., Tuesday and Thursday, Winter Session. Begins October 8. Repeated as

Section IV—Spring Session. Begins February 11

Section V—2:10-4 p. m., Monday and Friday, Winter Session. Begins October 7. Repeated as

Section VI—Spring Session. Begins February 10

Room 509 H. A.

Limited sections. Each section requires fifteen students

This course includes the cutting, fitting and making from patterns of shirtwaists and unlined dresses in cotton, silk and wool. Students provide materials.



**Clothing e71L—Dressmaking, advanced.** Fifteen three-hour lessons. No credit. Fee \$15. Mrs. NELSON

Section II—9-11:50 a. m., Wednesday, Spring Session. Begins February 12. Room 509 H. A.

The section requires fifteen students

Students provide required materials.

**Clothing e7L—Millinery, elementary.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$15. Mrs. NELSON

Section I—10-11:50 a. m., Monday and Friday, Winter Session. Begins October 7. Repeated as

Section II—Spring Session. Begins February 10

Section III—2:10-4 p. m., Tuesday and Thursday, Winter Session. Begins October 8. Repeated as

Section IV—Spring Session. Begins February 11

Section V—10-11:50 a. m., Tuesday and Thursday, Winter Session. Begins October 8

Room 311 H. A.

Each section requires fifteen students

This course includes the making of frames in wire and willow; the covering of hats in silk, velvet, lace and straw; and demonstrations in trimming. Students provide materials.

**Clothing e17L—Millinery, advanced.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$15. Mrs. NELSON

10-11:50 a. m., Tuesday and Thursday, Spring Session. Begins February 11. Room 311 H. A.

Requires fourteen students

Prerequisite: Clothing e7. Students provide required materials.

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Other and more advanced courses in clothing, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor FALES

## HOUSEHOLD ADMINISTRATION

**\* Administration e1L—Housewifery and house management.** Discussions, observation and practical work. Credit IV. 2 points. Fee \$12. Miss BALDERSTON and assistant

Section I—2:10-4 p. m., Monday and Wednesday, Winter Session. Repeated as Section II—Spring Session

Section III—9-10:50 a. m., Monday and Friday, Winter Session. Repeated as Section IV—Spring Session

Room 53 H. A.

Limited sections. Each section requires fifteen students

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor or the Secretary of the Department of Physical Education must be consulted before registration, and written permission obtained.

This course treats of the kinds of work needed in various parts of the household and the systematic planning of the daily routine in care of rooms and their equipment. Special topics are: tools and materials; labor-saving appliances; care, cleaning and repair; household efficiency; schedules of work; household service.

**Administration e5—Home economics for family visitors.** 2 points. Fee \$12. Miss WINSLOW  
9 a. m. Monday and Wednesday, Winter and Spring Sessions  
Requires fifteen students

This course discusses certain of the home-making problems of small income families, and the methods of helping such families to live according to better standards with reference to food, clothing, housing, housekeeping, and child care. It also discusses methods of increasing household thrift by budget planning and budget supervision.

**Administration 5x—Field work in family visiting.** 1 point. Supplementary to Administration 5. Fee \$6. Miss WINSLOW  
Hours to be arranged

This course provides opportunity for supervised field work in connection with recognized social agencies, for the purpose of acquainting students with actual home-making problems and methods of helping families to meet these problems more successfully.

\* **Administration e11L—Domestic laundering.** Discussions, demonstrations and laboratory work. Credit IV. 2 points. Fee \$12. Miss BALDERSTON and assistant

Section I—9-11:50 a. m., Tuesday, Winter Session. Repeated as  
Section II—Spring Session, if there is a registration of fifteen students  
Rooms 53 and 57 H. A.  
Limited sections

Intended for the teacher or for the person concerned with household management. It presents the principles and processes included in laundry work; space, equipment, and materials required for work in the home; machinery for domestic work, its cost, care and uses; the processes of laundering; sorting, soaking, removal of stains, disinfecting; methods of handling cotton, linen, woolen, silk; special precautions with colored materials; rinsing, bluing, wringing, drying, starching, dampening, folding, ironing, mangling, rough drying; care of fine work, embroidery, laces; system in the domestic laundry; the household and the commercial laundry

Recommended preparatory: Chemistry 1 or 3.

\* **Administration e21—Marketing.** Credit IV. 2 points. Fee \$12  
Section III—10-11:50 a. m., Wednesday, Winter Session. Repeated as  
Section IV—Spring Session  
Each section requires fifteen students

This course deals with the problems of purchasing household and food supplies. It discusses methods of buying, quality, quantity, and tests; ordinary food supplies, and discusses the sources of supply, season and prices.

**House management.** A special circular may be obtained from the Secretary of Teachers College.

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Other and more advanced courses in administration, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor GUNTHER

### PRACTICAL ARTS PHYSICS

**Laboratory ticket:** Students in all courses in physics are required to purchase from the Bursar a laboratory breakage ticket, good for all science departments, price \$2. Unused coupons are redeemable at the end of any Session.

Students who apply for exemption from required courses in physics on the basis of study previously completed at other colleges, must submit note-books, names of text-books used and brief outlines of previous work.

**Physics 1L—General course in applied physics.** Lectures, excursions, and laboratory work. 4 points. Mr. GOOD and assistants

Section III—2:10-5 p. m., Tuesday and Thursday, Winter Session

Section IV—2:10-5 p. m., Monday and Wednesday, Spring Session

Limited sections. Room 408 T. C.

This course includes a series of exercises in the study of practical appliances, and serves as a basis for a scientific interpretation of physical experience.

A considerable part of the work involves the construction, operation and uses of such appliances as clocks, pulleys, balances, pumps, elevators, water-motors, water systems, steam-engines, gas-engines, water heaters, the automobile, musical instruments, the camera, the microscope, the projectoscope, electric lighting, household electrical utensils, ammeters, voltmeters, wattmeters, electric cells, storage batteries, the telegraph, the telephone, motors, generators, wireless, and the X-ray.

**Physics 1a—Lectures in Physics 1.** 2 points

First hour of each three-hour period stated above.

**Physics 31L—Household physics.** Lectures, excursions, and laboratory work. 2 points. Mr. GOOD and assistants

Section IV—2:10-5 p. m., Thursday, Spring Session

Limited section. Room 408 T. C.

The purpose of this course is to teach how to use and care for the equipment of homes and institutions, with particular reference to mechanical and sanitary aspects. It will show how modern appliances may be either nuisances or sources of comfort, according as one can or cannot make intelligent use of them. The course will deal with water supply, plumbing, sewers, heating, ventilation, refrigeration, gas supply, stoves, lamps, electric lighting, cooking and heating, telephone, elevators and dumbwaiters, machinery for dishwashing, laundry and cleaning, fire extinguishers, and general repairs.

Prerequisite: Physics 1.

**Music e31—Sound as related to music.** Lecture-demonstrations, excursions and laboratory work. 2 points. Fee \$12. Mr. GOOD and others

See description on page 123

**Household economics e79—Household economic science.** Credit IV. 2 points. Fee \$12. Professor ANDREWS

Section I—3:10-4 p. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session

Section III—4:10-5 p. m., Monday and Wednesday, Winter Session. Repeated as Section IV—Spring Session

Each section requires fifteen students

Deals with the organization and control of family and personal life through the economic relations of the household. The family income and its expenditure, including the following



topics: the income, its source, and the equivalent of income in productive labor within the household; family expenditures and their regulation; the budget system; the items of the budget as measures of standards of living; necessities for efficient living—shelter, food, clothing, and personal life; house ownership versus rental; house maintenance, furnishings, and equipment; operating expenses and the cost of cleanliness; the cost of food and clothing; the personal life as reflected in personal expenditure; thrift; methods of saving, as savings banks, investments and insurance—life, accident, and fire.

**Household economics e81—Household accounts.** Credit IV. 2 points  
Spring Session. Professor ANDREWS

2:10-4 p. m., Friday. Fee \$12

Requires fifteen students

Gives special attention to household accounts, for the teacher, house manager, and consultant.

## INDUSTRIAL ARTS

### *Art Industries*

For courses in woodcarving, hammered metal, silversmithing, jewelry and color printing, see under Fine Arts.

### *Industrial Arts Education*

**\* Industrial arts e143-144—Industrial arts for the elementary grades.**

Credit IV. 2 points each Session. Fee \$12 each Session. Miss PATRICK

Section I—2:10-4 p. m., Monday and Wednesday

Section II—3:10-5 p. m., Tuesday and Thursday

Section III—9-12:20 a. m., Saturday

Each section requires fifteen students

This course deals with those typical forms of industrial arts work which are practical in the first six grades of the elementary school.

It aims to secure a method of instruction that will emphasize thinking about concrete objects with relation to industrial uses; the projects include simpler phases of weaving, sewing, clay-working, cookery, wood-, metal-, and paper-working. The application of design to these projects is cared for. The relations of nature-study, geography, history, art, literature and arithmetic to the course are considered.

**\* Industrial arts e145-146—Teaching industrial arts in elementary schools.** Credit IV. 2 points each Session. Professor BONSER and Mrs. MOSSMAN

3:10-4 p. m., Tuesday and Thursday. Fee \$12 each Session

Requires fifteen students

For full description see *Announcement of School of Practical Arts*.

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### *Textile Industries*

The following courses of twelve lessons each will be given on certain evenings 8-10 p. m., beginning in October, 1918: (a) woolens, (b) silks, ribbons, and pile fabrics, (c) cottons and cotton mixtures. Special circulars may be obtained in September from the office of the Secretary of Teachers College.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

Other and more advanced courses in Industrial arts, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to the instructor.

### *Mathematics*

**\* P. A. Mathematics e31-32—Industrial mathematics.** Credit IV. 2 points each Session. Mr. BRECKENRIDGE

11-12:50 p. m., Saturday. Fee \$12 each Session

Requires fifteen students

This course is designed especially for teachers of mechanic arts in technical or trade schools and for teachers in elementary or academic high schools who wish to vitalize the teaching of mathematics by the use of practical problems.

Prerequisite: College entrance mathematics or an equivalent experience in mechanic arts.

**\* P. A. Mathematics e159-160—The teaching of applied mathematics.** Lectures, discussions, and practical work. 2 points each Session. Fee \$12 each Session. Mr. BRECKENRIDGE

Saturday, 11 a. m.—12:50 p. m.

For teachers of mathematics or mechanic arts in technical trade, or academic schools. The course includes the use of the transit and level; theory and field practice in problems in surveying that can be used in secondary schools; the use of the slide rule, planimeter, integrator, and sextant; a study of graphs as practical aids; the theory of approximation and errors; and the use of the micrometer and vernier; consideration is given to the teaching of practical problems selected according to the needs of the student from such subjects as the following: rough lumber, general construction, forestry methods in heights of trees; house building, pulley, belts and speeds; pattern making and foundry work, cutting speed and feed, tapers, thread proportions, gearing for screw cutting, indexing, gear proportions and spirals, automobile work, agriculture, and such war problems as range finding. A serious study is made of genuine applied problems, of the history of the teaching of mathematics in industrial schools, both in America and in Europe, and of the present organizations of courses and methods of teaching applied mathematics in industrial and technical schools of secondary grade.

### MUSIC .

#### *General Art of Music*

**\* P. A. Music e25-26—Sight singing.** Credit IV. 2 points each Session. Mr. KRAFT

3:10-4 p. m., Monday, Wednesday and Friday, Room 118 T. C. Fee \$12 each Session

Requires fifteen students

This course develops speed in determining what the notation means and skill in its vocal production. The aim of the work is to provide the general student with the fundamental work necessary for all forms of musical activity and to serve as an introductory course to professional students who are unable to do the work required in Music 13-14—Tone thinking.

**\* P. A. Music e13-14—Tone thinking.** Music dictation and reading, including harmonic and melodic material. Credit IV. 2 points each Session. Mr. KRAFT

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

4:10-5 p. m., Monday, Wednesday and Friday, Room 118 T. C. Fee \$12 each Session

Requires fifteen students

This course is basic for all singers, players, and music teachers. It gives practice in describing, in writing and orally, what is heard in music, and includes singing at sight.

Prerequisite: Either Music 25-26 or the ability to write from hearing a simple phrase of music.

**Music e21-22—Epochs in the development of music.** Lectures with musical illustrations and recitals. 2 points each Session. Fee \$12 each Session. Professor FARNSWORTH and Miss WIETHAN

4:10-5:30 p. m., Thursday. Room 502 Horace Mann School

A survey of the history of music with reference to those events that affect our present musical interests giving (a) material and method for the teaching of history and appreciation of music in schools; (b) opportunity for an acquaintance with the art that shall serve as a basis for greater musical enjoyment.

**\* P. A. Music e42—Musical literature.** Credit IV. 2 points Winter Session. Professor FARNSWORTH and Miss WIETHAN

3:10-4 p. m., Tuesday and Thursday, Room 502 Horace Mann School. Fee \$12  
Requires fifteen students

The aim of this course is to aid in forming a standard of taste in music by utilizing the unusual musical opportunities that the city affords. The work consists of musical illustrations, with discussions and practice in reporting.

**\* P. A. Music e65-66—Chorus singing and conducting.** Credit IV. 2 points each Session. Mr. KRAFT

11-11:50 a. m., Tuesday, Wednesday and Thursday, Room 118 T. C. Fee \$12 each Session

Requires fifteen students

(a) Discussion of the means employed by the conductor in the interpretation of a composition; preparation of typical programs, giving reasons for choice and order of compositions; review of material suitable for school choruses; the organization of instrumental music in schools and the arrangement of parts for best effect under given conditions.

(b) Practice in chorus singing and conducting by members of the class.

### *Technical Music Courses*

**\* P. A. Music e15-16—Voice: First year.** Individual work in groups limited to four. Credit IV. 2 points each Session. Special fee for Sections II and III, \$25 for each Session. Not charged at \$6 per point

Section II—Room 605 H. A. Miss DASCHBACH

In this section special groups are formed for kindergartners, practice being given in the music they are required to use. Hours to be arranged

Section III—Room 605 H. A. Hours to be arranged. Mr. JOLLIFFE

**\* P. A. Music e35-36, e55-56, e75-76—Advanced courses in voice.** Hours to be arranged. Given in groups; under same conditions as to credit, hours and fees as for the same instructors in Music e15-16. Consult Professor FARNSWORTH

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.



**Music e31—Sound as related to music.** Lectures, excursions and laboratory work. 2 points. Fee \$12. Mr. GOOD, Mr. KRAFT, Professors WOOD and WHITLEY 2:10-5 p. m., Tuesday, Spring Session. Room 408 T. C.

A practical study of the physical basis of sound production and transmission and the application of physical principles to the typical musical instruments. The first hour will be devoted to class demonstration and discussion. The laboratory hours will include experiments in the physical laboratory, excursions to instrument factories, and special lectures on the physiology and psychology of sound interpretation.

**\* P. A. Music e27-28—Piano: First year.** Credit IV. 2 points each Session. Requires at least six hours' practice a week. Special fee \$25 for each Session. Not charged at \$6 per point. Mrs. ZERBE-COWL

(a) Individual work in groups limited to four. Once a week

The work presents the technique of playing, sight-reading, accompanying and drill in methods for concentration and practice, requiring, as a result, the ability to play at least a dozen pieces from memory.

(b) Class lessons: once a week, combining all groups

4:10-5 p. m., Tuesday, and other hours to be arranged with the instructor, Mrs ZERBE-COWL

Room 118 T. C.

The work includes ear training, interpretation, with examples by both students and instructor. Analyses and estimates are made of a large number of pieces.

**\* P. A. Music e37-38, e57-58, e67-68—Advanced courses in piano.** Hours to be arranged. Given in groups; under same conditions as to credit, hours and fees as for the same instructors in Music 17-18. Consult Professor FARNSWORTH

**Piano practice**—Fee for use of pianos by students registered for eight or more points in a Session is \$4 per Session for six hours or less per week. Arrange hours at the office of Practical Arts.

**\* P. A. Music e19-20—Organ.** Credit IV. 2 points each Session. Special fee, \$35 for each Session. Not charged at \$6 per point. Mr. FOWLER

Individual work in groups. Requires three students to form a group; limited to four. Work and hours to be arranged. Consult Professor FARNSWORTH

Manuals, pedals, technical studies, Bach's Eight Short Preludes and Fugues. Albrecht-berger's Trios.

Prerequisite: Elementary piano-playing.

**\* P. A. Music e29-30—Organ.** Credit IV. 2 points each Session. Special fee, \$50 for each Session. Not charged at \$6 per point. Mr. LAMOND

**\* P. A. Music e39-40—Violin.** Credit IV. 2 points each Session. Special fee, \$35 for each Session. Not charged at \$6 per point. Mr. STOWELL

Hours to be arranged. Room 603 H. A.

Individual work in groups limited to four. Requires three students to form a group

The work in this course includes a good position for scales in all keys, bowing, exercises, studies, solos, and special work of the development of good tone, together with ensemble and sight-reading classes.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

Other courses in music for teachers, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor FARNSWORTH

### *Speech*

**Speech e1A—Voice and diction, introductory.** Lectures, class exercises, and individual practice. Credit IV. 2 points. Fee \$12. Professor LATHAM and assistant 10-11:50 a. m., Saturday, Winter Session

Requires fifteen students

(1) Breathing, carrying tone, distinct utterance; correction of individual faults—nasality, throatiness, etc.; a practical study of phonetics leading to standard pronunciation of English and to a working knowledge of the facts of speech necessary for teaching speech sounds.

(2) A study of the elements of vocal expression—pitch, inflection, time, etc.; practice in speaking with notes and without notes; effective use of the voice in teaching, with practice in the oral conduct of various school exercises.

**Speech e3-e4—Story-telling and reading, introductory.** Lectures, practice, criticism, and recitals. Credit IV. 2 points each Session. Fee \$12 each Session. Mrs. HALLOCK

4:10-5 p. m., Tuesday and Thursday

Requires fifteen students

This is an elementary course in story-telling and reading as fine arts. It is planned to meet the needs of students intending to use these arts in the home, the school, the playground and social clubs.

**Speech e3A.** Brief course. Similar to Speech e3-e4. 2 points. Fee \$12

10-11:50 a. m., Saturday, Spring Session

Requires fifteen students

**Speech e182—Dramatization.** Investigation and practical work. 2 points. Fee \$12. Professor LATHAM and others

9-11:50 a. m., Saturday, Spring Session

Requires fifteen students

This course is given to meet the rapidly increasing demand for guidance in the selection and use of material for original dramatic exercises in schools and social centers. Simple plays will be made and acted. The work of the class will be done in small groups interested in similar problems, and the special aims of individual students will be considered as far as that can be done without slighting attention to basic principles of dramatic expression.

**Practical arts e181—School and community festivals.** Credit IV. 2 points. Miss COLBY and associates

10-11:50 a. m., Saturday, Winter Session

Requires fifteen students

### NURSING AND HEALTH

**\* Nursing e3—Physical care of infants and small children.** Lectures, demonstrations and readings. Credit IV. 2 points. Fee \$12. Dr. KENYON

Section I—3:10-5 p. m., Monday, Winter Session. Repeated as

Section II—Spring Session

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.

Section III—10-11:50 a. m., Tuesday, Winter Session. Repeated a

Section IV—Spring Session

Sections II and IV require fifteen students

Presents the theory and practice of the care of infants and small children in a series of lectures and demonstrations. The following topics will be treated: the basis in physiological knowledge for the rational care of the child, the physical care of the infant and child, presenting in turn such topics as the daily régime of the infant, food, sleep, bathing, clothing; the child from the third to the sixth year, nursery, clothing, food.

**\* Nursing e5—Elementary home nursing and first aid.** Lectures, demonstrations and laboratory practice. Credit IV. 2 points. Fee \$12. Miss HAWKINSON

Section I—2:10-5 p. m., Thursday, Winter Session. Repeated as

Section II—Spring Session

Section III—2:10-5 p. m., Friday, Winter Session. Repeated as

Section IV—Spring Session

Each section requires fifteen students

Instruction in domestic emergencies and first aid, and in simple procedures in the home care of the sick. It includes such topics as the treating of bleeding, wounds, fractures, sprains, fainting, convulsions, shock, asphyxiation and poisoning, caring for the sick when the professional services of a nurse are not required, including care in colds and other slight indispositions; care of children and aged; simple sick-room procedures and food for the sick.

**Biology e4x—Biology for sex-education.** 1 point when taken parallel with any course in hygiene or biology. Open only to women. Miss STACKPOLE  
5:10-6 p. m., Monday, Spring Session. Room 421 T. C. Fee \$6

A series of fifteen illustrated lectures and laboratory demonstrations dealing with the anatomical, physiological, embryological and bacteriological facts of biology which are necessary for understanding sex-education.

Other and more advanced courses in nursing and health, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor NUTTING

## PHYSICAL EDUCATION

The following extension courses are given in the Thompson Building of Teachers College October 1, 1918, to May 15, 1919. First half-year (Winter Session) begins September 25. Second half-year (Spring Session) begins February 5

Lockers are available for women only. A deposit of twenty-five cents must be made for each locker key. This must be redeemed and gymnasium suits removed before June 6

The swimming pool is reserved for women and children

Gymnasium shoes must be soft-soled and without heels

**\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor must be consulted before registration, and written permission obtained.**



Information concerning gymnasium and swimming suits may be obtained from the Secretary of the Department of Physical Education

### Special Lessons

A number of special series of lessons for women and children in gymnastics, folk and natural dancing, swimming, and corrective gymnastics will be given from September, 1918, to May, 1919, in the Thompson Building of Teachers College by the School of Practical Arts in cooperation with the University Institute of Arts and Sciences. Many of the most popular series are given in the evening. A special circular may be obtained in September from the Secretary of Teachers College

- \* Physical education e1-2—Elementary practice for women.** Credit IV. 2 points for the entire course. Fee \$6 each Session  
 Section I—4:10-5 p. m., Tuesday and Thursday, Room 255 Thompson  
 Section II—5:10-6 p. m., Monday and Wednesday

The work of this course is arranged with reference to the needs of the more mature students who wish the simpler forms of exercise. These include gymnastic exercises and games, swimming and elementary dancing.

- \* Physical education e3-4—Advanced practice for women.** Credit IV. 2 points for the entire course. Fee \$6 each Session. Miss YUNCK  
 3:10-4 p. m., Monday and Wednesday

This course is arranged to give practice in dancing to students who have already had two years' college training or its equivalent.

- \* Physical education e177-178—The dramatic game.** Practice. Credit IV. 2 points each Session Miss COLBY  
 5:10-6 p. m., Tuesday and Thursday, Thompson Gymnasium. Fee \$12 each Session

This course presents the earliest forms of the dramatic game. Studies are made of children's games from all parts of the world, and of the simplest dances and dramas of primitive people and of the folk of Europe.

- Practical Arts e181—School and community festivals.** Credit IV. 2 points. Miss COLBY  
 10-11:50 a. m., Saturday, Winter Session

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Other courses in physical education, with numbers below 100, described in the *Announcement of the School of Practical Arts*, may be made available for specially qualified non-matriculated students who bring to the Director of the School of Practical Arts the written approval of Professor WOOD

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 24 or February 4. The instructor or the Secretary of the Department of Physical Education must be consulted before registration, and written permission obtained.

## ACADEMIC CALENDAR

1918-1919

(For full academic calendar, apply to the Secretary of Columbia University)

1918

- July 8—Monday. Nineteenth **Summer Session begins.**
- August 16—Friday. Nineteenth **Summer Session ends.**
- September 16—Monday. Entrance and deficiency examinations begin.
- September 18—Wednesday. **Registration** for the Winter Session in Extension Teaching (including the payment of fees) **begins.**
- September 25—Wednesday. **Winter Session, 165th year of Columbia University, begins.**
- September 26—Thursday. Classes in Extension Teaching begin.
- October 5—Saturday. Last day for changes in registration in Extension Teaching
- November 5—Tuesday. Election Day, holiday.
- November 27—Wednesday. **Annual Thanksgiving Service** in St. Paul's Chapel.
- November 28—Thursday

to

- November 30—Saturday, inclusive, Thanksgiving holidays.
- December 8—Sunday. **Annual Commemoration Service** in St. Paul's Chapel.
- December 23—Monday

to

1919

- January 4—Saturday, inclusive, Christmas holidays.
- January 16—Thursday. Mid-year entrance examinations begin.
- January 27—Monday
- to
- February 1—Saturday, inclusive, mid-year examinations in Extension Teaching. **Registration** for the Spring Session in Extension Teaching (including the payment of fees) **begins.**
- February 4—Tuesday. **Winter Session ends.**
- February 5—Wednesday. **Spring Session begins. University Service** in St. Paul's Chapel. Classes in Extension Teaching begin.
- February 12—Wednesday. Alumni Day.
- February 15—Saturday. Last day for changes in registration in Extension Teaching.
- February 22—Saturday. Washington's Birthday, holiday.
- April 17—Thursday
- to
- April 21—Monday, inclusive, Easter holidays.

May 26—Monday

to

May 31—Saturday, inclusive, final examinations in Extension Teaching.

May 30—Friday. Memorial Day, holiday.

June 1—Sunday. **Baccalaureate Service.**

June 4—Wednesday. **Commencement Day.**

June 11—Wednesday. **Spring Session ends.**

June 16—Monday. Entrance examinations begin.

July 7—Monday. Twentieth **Summer Session begins.**

August 15—Friday. Twentieth **Summer Session ends.**

September 15—Monday. Entrance examinations begin.

September 17—Wednesday. **Registration** for the Winter Session in Extension Teaching (including the payment of fees) **begins.**

September 24—Wednesday. **Winter Session, 166th year of Columbia University, begins.**

September 25—Thursday. Classes in Extension Teaching begin.



# INDEX

	PAGE
ACADEMIC CALENDAR . . . . .	127, 128
ADMINISTRATIVE BOARD . . . . .	iii
OFFICERS OF INSTRUCTION . . . . .	IV-XVI
INTRODUCTORY STATEMENT . . . . .	I-17
CLASSES OF STUDENTS . . . . .	I
COURSES OF INSTRUCTION . . . . .	I, 2, 18-126
REGISTRATION . . . . .	2, 3, 98, 99
FEES . . . . .	3, 99
ADMISSION . . . . .	3, 4
PRIVILEGES . . . . .	4, 5
OFFICE OF EXTENSION TEACHING . . . . .	4
RESIDENCE HALLS . . . . .	5
ADVISER TO WOMEN STUDENTS . . . . .	5
LOCATION OF EXTENSION COURSES . . . . .	5, 6
CALENDAR AND HOURS . . . . .	6
ABSENCES . . . . .	6
EXAMINATIONS . . . . .	6, 7
THE UNIVERSITY PRESS BOOK STORE . . . . .	7
ARCHITECTURE . . . . .	7, 8, 22-26
BUSINESS . . . . .	8, 9, 28-38
COLLEGE COURSE . . . . .	9
COLLEGE ENTRANCE COURSE . . . . .	10, 11
ENGINEERING COURSES . . . . .	11, 12, 43-48
SCHOLARSHIPS . . . . .	12
LAW . . . . .	12, 13, 32, 33, 69
MEDICINE . . . . .	13
PREMEDICAL COURSE AT THE LONG ISLAND CITY HOSPITAL . . . . .	13
OPTICS . . . . .	13, 75
SECRETARIAL STUDIES . . . . .	14, 89
INSTITUTE OF ARTS AND SCIENCES . . . . .	14
THE DEGREE OF MASTER OF ARTS . . . . .	15
REGULATIONS governing credit toward degrees of A.B. and B.S. in Barnard, Columbia, and Teachers College . . . . .	15, 16
THE DEGREE OF MASTER OF SCIENCE . . . . .	15
COURSES IN TEACHERS COLLEGE . . . . .	16, 98-126
RELATION OF EXTENSION COURSES TO OTHER UNIVERSITY WORK . . . . .	16
LOCAL CENTERS . . . . .	16, 17
ENROLMENT . . . . .	17
CREDITS . . . . .	18

## COURSES OF INSTRUCTION:

Accounting (see also Evening Business circular) . . . . .	30, 31, 34, 35
Accounting laboratory . . . . .	35
Accounts, household . . . . .	120
Administration . . . . .	28, 34, 117-118
Administration, household . . . . .	117, 118
Advertising . . . . .	28, 29, 34, 81
Agriculture . . . . .	18-22
Agricultural economics . . . . .	31

	PAGE
COURSES OF INSTRUCTION: (Continued)	
Algebra . . . . .	47, 71-73
Alternating currents . . . . .	45
American history . . . . .	63, 64
American government . . . . .	61, 62
Analytical geometry . . . . .	73
Ancient architecture . . . . .	24, 56
Ancient history . . . . .	63-65
Ancient ornament . . . . .	24, 56
Applied psychology . . . . .	81
Architectural design . . . . .	25, 26
Architecture . . . . .	22-26, 56
Arithmetic . . . . .	32
Art, History of . . . . .	57
Astronomy . . . . .	26, 27
Auditing . . . . .	35
Bacteriology . . . . .	100
Bibliography . . . . .	70
Biology . . . . .	97, 100
Bookkeeping (see also Evening Busi- ness Circular) . . . . .	27
Botany . . . . .	27, 28, 97
Boxing . . . . .	80
Browning . . . . .	52
Building construction . . . . .	23
Building equipment . . . . .	23
Building materials . . . . .	23
Business . . . . .	8, 9, 28-38
Business administration . . . . .	28, 34
Business arithmetic . . . . .	32
Business English . . . . .	56
Business mathematics . . . . .	31
Business organization . . . . .	28, 34
Calculus . . . . .	73
Casualty insurance . . . . .	33
Cataloguing . . . . .	70, 71
Charcoal drawing . . . . .	25
Chemistry . . . . .	38-41, 100-102, 112
Children's work . . . . .	70
Choir . . . . .	74
Chorus . . . . .	73, 122
Civil Engineering . . . . .	43, 44
Classification . . . . .	70
Clothing . . . . .	112-117
College entrance English . . . . .	55
Commerce and industry (see also Evening Business circular) . . . . .	8, 9, 28-38
Commercial arithmetic . . . . .	32
Commercial English . . . . .	56
Commercial geography . . . . .	33
Commercial law (see also Evening Business circular) . . . . .	33
Comparative government . . . . .	62

	PAGE
COURSES OF INSTRUCTION: ( <i>Continued</i> )	
Comparative literature . . . . .	41, 42, 53
Composition, English . . . . .	48-51, 54, 55
Concrete . . . . .	43, 120
Concrete construction . . . . .	43, 120
Construction . . . . .	23, 43, 47
Contemporary dramatic literature . . . . .	52
Contracts . . . . .	32
Conversational French (see also circular of Spoken Languages) . . . . .	81-85
Conversational German (see also circular of Spoken Languages) . . . . .	58-61
Cookery . . . . .	109-111
Coplanar statics . . . . .	47
Corporation finance . . . . .	31
Corporation law . . . . .	32
Cost accounting . . . . .	31
Costume design . . . . .	106, 107
Cottons . . . . .	120
Dancing . . . . .	126
Decorative arts . . . . .	56, 57
Dental hygiene . . . . .	2, 75
Descriptive geometry . . . . .	22, 46
Design . . . . .	25, 26, 105-107
Diction . . . . .	124
Diplomacy . . . . .	66, 67
Direct current machinery . . . . .	45
Drafting . . . . .	45-47
Drama . . . . .	50-52
Dramatic composition . . . . .	50
Dramatic literature . . . . .	52
Dramatic method in teaching . . . . .	42
Dramatization . . . . .	124
Drawing . . . . .	25, 42, 103, 104
Dressmaking . . . . .	113-117
Ear training . . . . .	74
Economics . . . . .	31, 37, 38, 118-120
Economics, household . . . . .	119
Educational dramatics . . . . .	42, 43
Efficiency . . . . .	28, 34
Electrical engineering . . . . .	44, 45
Elocution . . . . .	51, 124
Embroidery . . . . .	115
Engineering . . . . .	43-48
Engineering drafting . . . . .	45-47
English . . . . .	48-56
English for foreigners . . . . .	53
English grammar . . . . .	54
English history . . . . .	65
English novel . . . . .	52
Ethics . . . . .	76
European history . . . . .	63-65
European literature . . . . .	41, 52, 53
Extramural courses . . . . .	16, 17
Faust . . . . .	61
Fertilizers . . . . .	19
Festivals . . . . .	126

	PAGE
COURSES OF INSTRUCTION: ( <i>Continued</i> )	
Filing—in offices (see also Secretarial circular) . . . . .	71
Finance (see also Evening Business circular) . . . . .	8, 9, 28-38
Fine arts . . . . .	56-58, 102-108
Fire insurance . . . . .	33
First aid to the injured . . . . .	125
Flower culture . . . . .	21
Foods and cookery . . . . .	109-111
Foreign salesmanship . . . . .	34
Framed structures . . . . .	47
Free hand drawing . . . . .	42
French (see also circular of Spoken Languages) . . . . .	81-85
French literature . . . . .	84-85
French Revolution . . . . .	63
Freshman English . . . . .	48
Fruit-growing . . . . .	20, 21
Fungi . . . . .	28
Games . . . . .	79, 126
Geography . . . . .	33
Geology . . . . .	58
Geometry . . . . .	22, 46, 72, 73
German (see also circular of Spoken Languages) . . . . .	58-61
German literature . . . . .	61
Government . . . . .	61, 62
Grammar, English . . . . .	54
Graphics . . . . .	46
Greek . . . . .	62, 63
Gymnasium . . . . .	79, 125, 126
Gymnastics . . . . .	79, 125, 126
Harmony . . . . .	74, 75
History . . . . .	63-66
History of art . . . . .	57
History of cookery . . . . .	111
History of costume . . . . .	113
History of German literature . . . . .	61
History of philosophy . . . . .	77
Homer . . . . .	62
Household administration . . . . .	117-118
Household arts . . . . .	108-120
Household economics . . . . .	119, 120
Household management . . . . .	118
Housework . . . . .	117
Hygiene . . . . .	75, 81, 124, 125
Immigration . . . . .	91
Indexing, filing, and cataloguing as applied in business . . . . .	71
Industrial arts . . . . .	120
Inorganic chemistry . . . . .	39, 40
Insurance . . . . .	33
International law . . . . .	66, 67
International relations . . . . .	67
International trade . . . . .	34
Introduction to poetry . . . . .	49
Investments . . . . .	35

## PAGE

## PAGE

## COURSES OF INSTRUCTION: (Continued)

## COURSES OF INSTRUCTION: (Continued)

Italian (see also circular of Spoken Languages) . . . . .	85, 86
Jewelry . . . . .	120
Journalism . . . . .	67
Journalistic German . . . . .	60
Latin . . . . .	68, 69
Latin America . . . . .	36, 37, 66
Latin-American commercial law . . . . .	33
Latin poetry . . . . .	67, 68
Laundering . . . . .	118
Law . . . . .	12, 13, 32, 33, 69
Lettering . . . . .	103
Letter writing . . . . .	89
Library administration . . . . .	70
Library economy . . . . .	69-71
Life class . . . . .	105
Life insurance . . . . .	33
Limited classes . . . . .	99
Literary criticism . . . . .	51
Literature, English . . . . .	49-53
Lithology . . . . .	58
Logic . . . . .	75
Machine drafting . . . . .	45-47
Magazine writing . . . . .	49, 50
Management, household . . . . .	118
Marketing . . . . .	118
Masonry . . . . .	44
Mathematics . . . . .	22, 46, 47, 71-73, 121
Mechanical drafting . . . . .	45-47
Mechanical equipment of buildings . . . . .	23
Mechanics . . . . .	45-48
Mechanics of materials . . . . .	47
Medieval architecture . . . . .	24, 56
Medieval history . . . . .	63
Medieval ornament . . . . .	24, 56
Metalworking . . . . .	107
Metropolitan Museum . . . . .	56, 57
Microbiology . . . . .	100
Millinery . . . . .	115, 117
Modeling, clay . . . . .	25, 104
Modern ornament . . . . .	24
Modern poetry . . . . .	42
Motion pictures . . . . .	78, 79
Music . . . . .	73-75, 121, 122
Nature study . . . . .	100
Negotiable instruments (see also Evening Business circular) . . . . .	33
Neuro-anatomy . . . . .	75
Neurology . . . . .	75
Nursing . . . . .	80, 124, 125
Nutrition . . . . .	112
Ocean transportation . . . . .	36
Office management . . . . .	28, 34
Office training . . . . .	28, 34
Optics . . . . .	13, 75
Optometry (see optics) . . . . .	13, 75
Oral hygiene . . . . .	2, 75

Organ . . . . .	123
Organic chemistry . . . . .	41
Organization of business . . . . .	28, 34
Painting . . . . .	57, 104
Personal insurance . . . . .	33
Perspective . . . . .	23
Philosophy . . . . .	75-77
Phonetics . . . . .	77, 78
Photography . . . . .	78, 108
Photoplay composition . . . . .	78, 79
Physical education . . . . .	79, 80, 125, 126
Physics . . . . .	80, 119
Piano . . . . .	123
Plain and reinforced construction . . . . .	43-44
Plane surveying . . . . .	43
Play-writing . . . . .	50
Poetry . . . . .	42, 49, 51, 53
Politics (see Government) . . . . .	61, 62
Ports and terminal facilities . . . . .	36
Portuguese . . . . .	86
Practical advertising . . . . .	29
Practical arts . . . . .	98-126
Practical arts physics . . . . .	119-120
Practical science . . . . .	100
Preparatory courses . . . . .	53-55
Problems of the home in war times . . . . .	108
Proof-reading . . . . .	97
Psychology . . . . .	80, 81
Psychology of advertising . . . . .	34, 81
Public health . . . . .	90
Public speaking . . . . .	51
Qualitative analysis . . . . .	40, 41
Railway traffic and rates . . . . .	36
Reinforced concrete construction . . . . .	43, 44
Renaissance architecture . . . . .	24
Romance languages (French, Italian, Portuguese, Spanish) . . . . .	81-88
Russian . . . . .	88, 89
Russian literature . . . . .	42
Salesmanship . . . . .	29, 34, 81
Scenario writing . . . . .	78, 79
Scientific German . . . . .	60
Sculpture, History of . . . . .	57
Secretarial bookkeeping . . . . .	27
Secretarial correspondence . . . . .	89
Secretarial studies (see also Secretarial circular) . . . . .	14, 89
Semitic . . . . .	89
Sewing . . . . .	116
Sex-education . . . . .	125
Shades and shadows . . . . .	22, 23
Shakspeare . . . . .	52
Short story . . . . .	49, 50
Sight singing . . . . .	75, 121
Silk . . . . .	120
Silversmithing . . . . .	120
Slavonic (see Russian) . . . . .	88, 89



	PAGE
COURSES OF INSTRUCTION: ( <i>Continued</i> )	
Social economy . . . . .	93
Social psychology . . . . .	81
Social reform . . . . .	90, 91
Social secretary . . . . .	89
Social statistics . . . . .	92
Society of Beaux-Arts Architects . . . . .	25, 26
Sociology . . . . .	89-93
Soils . . . . .	19
Solid geometry . . . . .	72
Spanish (see also circular of Spoken Languages) . . . . .	86-88
Spanish literature . . . . .	87
Specifications . . . . .	23
Speech . . . . .	124
Spelling . . . . .	55
Stereotomy . . . . .	23
Stenography and typewriting . . . . .	93-97
Story-telling . . . . .	124
Structural design . . . . .	47
Structural drafting . . . . .	46
Structural mechanics . . . . .	47, 48

	PAGE
COURSES OF INSTRUCTION: ( <i>Continued</i> )	
Surveying . . . . .	43
Swimming . . . . .	79, 125
Telephony . . . . .	45
Tennyson . . . . .	49
Textiles (cotton, silk, wool) . . . . .	120, 121
Textiles and clothing . . . . .	112-117
Trigonometry . . . . .	47, 72
Tree fruits . . . . .	20
Typewriting . . . . .	93-97
Typography . . . . .	97
University Choir . . . . .	74
University Chorus . . . . .	73
Vegetable culture . . . . .	21
Victorian literature . . . . .	49, 52
Violin . . . . .	123
Voice . . . . .	122
Watercolors . . . . .	25
Wireless telegraphy . . . . .	45
Woolens . . . . .	120
Wrestling . . . . .	79
Zoology . . . . .	97







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December 16, 1918



# Columbia University Bulletin of Information

## Extension Teaching

Afternoon, Evening and  
Saturday Classes

Spring Session

February 5 to June 11, 1919

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## **Columbia University Bulletin of Information**

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1. Annual Reports of the President and Treasurer to the Trustees.
2. The Catalogue of the University, price twenty-five cents, and the Announcements of the several Colleges and Schools, and of certain Divisions, issued in the Spring, and relating to the work of the next year. These are made as accurate as possible, but the right is reserved to make change in detail as circumstances require. The current number of any of these Announcements will be sent without charge upon application to the Secretary of the University.

U.P.O.-30,000-1918

**The Office of Extension Teaching is  
Room 301 University Hall**

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## COLUMBIA UNIVERSITY

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FRANK A. DICKEY, A.B.  
*Registrar*

CHARLES S. DANIELSON  
*Bursar*

## COURSES OF THE SPRING SESSION 1918-1919

*Note.* The University reserves to itself the right to withdraw or modify these courses as may seem wise.

Courses will begin February 5, 1919.

**Admission.** No examinations are required for admission, but in cases of doubt, students must satisfy the Administrative Board that they can pursue the courses with advantage. All classes are open to both men and women.

**Registration.** Registration in the Spring Session begins January 30, 1919. Students are permitted to attend any class once before registering; thereafter they are required to come to the Registrar's office in person and file a blank giving such information as may be required for the University records, and a statement of the courses they wish to pursue. Students who took courses in the Winter Session and who desire to continue those courses in the Spring Session, or to add others, are required to renew their registration at the beginning of the Spring Session; such renewal must be completed, including payment of fees, by February 15; after that date, renewal or payment of fees for such students constitutes late registration and may be accepted only upon the payment of the statutory fee of \$5.00 therefor. Students registering for the first time after February 15 are not subject to a late registration fee, except when payment of fees is not completed within a week after the initial registration.

When students report at the office of the Registrar before February 15 that they have discontinued any or all courses for which they were duly registered, the tuition fees are returned; when they report after that date no rebate or credit is allowed. In the case of new students who register for the first time after February 8, one week from the date of registration is allowed for such report. Occasional exceptions to this rule may be made in cases where it is unmistakably best for a student to change from one course to another; such changes must be for sound educational reasons and must be approved in writing by the Director, or some one in authority in his office.

The office of the Registrar, Room 315 University Hall, will be open in addition to the regular daily hours, 9 a. m. to 5 p. m. (except Saturday), from January 30 to February 14 from 7 to 9:30 p. m., and thereafter from 7 to 9 p. m. The Saturday hours are from 9 a. m. to 12 m.

The mid-year examinations in Extension Teaching are held from January 27 to February 1, inclusive; the final examinations from May 26 to May 31, inclusive.

**Fees.** *University Fee.* For students in Extension Teaching exclusively, for each year or any part thereof, \$5.00.

*Tuition Fees.* The fee for each Session is announced with the description of the course.

**Payment of Fees.** Under the University Statutes registration is not complete until fees have been paid. Students postponing the payment of fees after registration, beyond February 15, or in any case for more than one week after their registration, will be liable as late registrants to a penalty fee of \$5.00.

**Rebates.** Students who are obliged to withdraw from all of their courses because of serious personal illness may be allowed a partial rebate of their tuition fees. In considering such applications, the student will ordinarily be charged ten per cent. of the total tuition fees for each week of the Session up to the date his written notice of withdrawal is received by the Registrar. The University Fee is never returned.

The office of the Bursar will be open daily from 9:30 a. m. to 3:30 p. m., and on Saturday morning from 9:30 a. m. to 12 m. This office will also be open every evening from 7 to 9:30 (except Saturday), from January 30 to February 14, and from February 17 to February 28, from 7 to 9 on Monday and Friday evenings only.

The fees to be paid by students are subject to change at any time at the discretion of the Trustees.

**General Information.** For further information concerning these courses or concerning any questions that may arise, students should call at the office of the Director, Room 301 University Hall, which is open from 9-5 daily, Saturday 9-1. This office will also be open evenings (except Saturdays) from 7:30 to 9:30, January 30 to February 14.

**Adviser of Women Students.** Women students are invited to apply freely to this officer for help and advice in regard to all matters concerned with their welfare at the University. Those under twenty-five years of age, not living with parents or relatives, must secure before registration her endorsement of their place of residence. Students may confer with the Adviser on any afternoon, except Saturday, between 2 and 4, in Room 301 University Hall, or, if necessary, by special appointment.

Intramural collegiate and professional courses will be given at Columbia University. Extramural courses will be given at the Long Island College Hospital, corner of Henry and Amity Streets, Brooklyn, at Bridgeport, Fairfield, Garfield, Scranton, Springfield, Stamford, Trenton and Yonkers, and at centers where there may be sufficient demand.

Classes will also be conducted at the New York Chapter of the American Institute of Banking, 138 East 35th Street.

The most convenient means of access to the University are the Subway (Broadway Branch) to 116th Street, Columbia University Station, the Sixth or Ninth Avenue Elevated to 110th Street Station, and Broadway or Amsterdam Avenue surface lines.

Attention is called to the classes in Spoken Language which begin February 10. A special pamphlet describing these conversational courses will be sent upon application.

**Credits.** Credit for courses in Extension Teaching is allowed for various degrees in accordance with the regulations which are stated in the full *Announcement of Extension Teaching*.



For courses numbered 100 to 299, inclusive, undergraduate credit will be determined by the various faculties under which the student intends to apply for such recognition.

All courses marked Credit I—May be counted toward the degrees of A.B. and B.S. in all parts of the University where these degrees are given, and toward appropriate diplomas in teaching. For other courses, which under certain conditions may be offered for credit by candidates for the A.B. or B.S. degree, see Credit II.

All courses marked Credit II—May be offered by graduate students toward the higher degrees. Open also to undergraduates on the approval of the appropriate Committee on Instruction obtained in advance.

All courses marked Credit IV—May be counted for matriculated students in the School of Practical Arts toward the degree of B.S.

All courses marked Credit V—May be counted toward the appropriate degrees in the Schools of Mines, Engineering and Chemistry, and Architecture.

All courses marked Credit IX—May be counted toward the degree of B.S. in Business.

Any course numbered 100 or above may be counted for undergraduate degrees under the general rules.

The fees and points as stated with the various courses are for the Spring Session. In the case of non-credit courses, the number of points is published merely to give a general idea of the amount of work required of the student.

**Courses that are marked \* are open only to students who have taken the preceding Session or its equivalent. All other courses are open to new students without restriction, except as noted in the description.**

### Agriculture

Students desiring to undertake courses in agriculture should consult before registering, Professor O. S. Morgan; office hours, 10–11 a. m., Wednesday, Thursday, and Friday, and at other hours by appointment. Room 511 Schermerhorn Hall. He will be glad to assist students in arranging their programs, and will outline classes in agriculture to cover the student's partial or complete time for one, two, or more years of study. Students who have special objects in view, such as preparing to become farm superintendents, or who desire to equip themselves as specialists should consult him about their programs. There is active demand from owners of farms for students adequately trained in technical and practical agriculture.

**Agriculture e2—Introduction to agriculture.** Lectures and laboratory. Credit I, IV. 3 points. Fee \$18. Professor O. S. MORGAN

Section 1—9:10–10:50 a. m., Saturday (lectures), Room 505 Schermerhorn; 11 a. m.–12:50 p. m., Saturday (laboratory), Room 502 Schermerhorn

Section 2—7:20–9 p. m., Wednesday (lectures), Room 505 Schermerhorn; 11 a. m.–12:50 p. m., Saturday (laboratory), Room 502 Schermerhorn

The object of this course is to give the student entering the study of agriculture a clear understanding of the main problem and principles of present-day scientific agriculture, particularly as practised in the eastern United States. The production of small grains, hay, grass, legumes, potatoes, and roots. The management of hay fields, clovers, alfalfa, vetches, cow peas, cereals for hay; pastures, seeding and management; the production of root crops. Excursions to farms.

**Agriculture e2a—Lectures only.** 2 points. Professor O. S. MORGAN  
9:10-10:50 a. m., Saturday, or 7:20-9 p. m., Wednesday, Room 505 Schermerhorn. Fee \$12

**Agriculture e4—Soils and fertilizers.** Lectures and laboratory. Credit I, IV. 3 points. Fee \$18. Professor O. S. MORGAN

Section 1—2:10-3:50 p. m., Thursday (lectures), Room 505 Schermerhorn; Laboratory arranged at convenience of students, or 2:10-4 p. m., Friday, Room 502 Schermerhorn, and agricultural greenhouse.

Section 2—7-8:40 p. m., Friday (lectures), Room 505 Schermerhorn. Laboratory arranged at convenience of students or on Saturday, 2:10-4 p. m., Room 502 Schermerhorn, and agricultural greenhouse.

Fertilizers, manures, soil amendments, soil types, physical and chemical factors, soils and crop problems in agriculture from the standpoint of soil fertility and productivity; the supply in the form of manure, etc., and the practical economic consideration of maintaining and increasing the crop-producing power of lands. Special plant studies on soils and fertilizers in the laboratory for soil analysis. Students are invited to bring soil from garden or farm for analysis.

**Agriculture e4a—Lectures only.** 2 points. Professor O. S. MORGAN  
2:10-3:50 p. m., Thursday, Room 505 Schermerhorn. Fee \$12

**Agriculture e12—Farm machinery and tractors.** Credit I, IV, in special cases. 2 points. Professor HAZEN

7:30-9:10 p. m., Tuesday (lectures), Room 505 Schermerhorn. Fee \$12.

*Tentative statement of time must be verified by student at time of registry.*

Introductory basic course in the manipulation and care of essential types of farm machines:  
1. Farm field machinery, tillage, seeding and harvesting. 2. Domestic and pumping, dairy machinery, steam and pumps. 3. Power machinery, gas engines, tractors and automobile.

An exhibit of the chief types of machines discussed and a partial demonstration of the machines in operation will be possible through the cooperation of the East Side Branch of the Y. M. C. A.

**Agriculture e16—Home garden fruits.** Lectures and laboratory. Credit I, IV, in special cases. 3 points. Mr. KAINS

7-8:40 p. m., Monday (lectures), Room 505 Schermerhorn; 7-8:50 p. m., Thursday (laboratory), Room 502 Schermerhorn. Fee \$18

The study of the culture of bush fruits, grapes and strawberries, dwarf tree fruits, and to some extent standard tree fruits will comprise the work of the Spring Session. Considerations similar to those developed in the course on tree fruits will be discussed.

**Agriculture e18—Vegetable culture.** Lectures and laboratory. Credit I, IV, in special cases. 3 points. Mr. KAINS

4:30-6:10 p. m., Thursday (lectures), Room 516 Schermerhorn; 4:30-6:20 p. m., Monday (greenhouse work). Fee \$18

The vegetable culture work will comprise a study of the preparation of soil and composts; seed testing and sowing; hot-beds and cold frames, transplanting, companion and succession cropping; tillage, spraying, harvesting, storage, marketing, disposal of low-grade products in kitchen; farm and market gardening.

### *Graduate Courses in Agriculture*

**Agriculture e102—Agronomy.** Credit III. 3 points. 8 hours laboratory. Conference weekly. Report optional. Professor O. S. MORGAN

Hours to be arranged. Fee \$18

**Agriculture 212—Research in soil, management.** Fertilizers, soil amendments, soil toxins as related to plant production. Credit III. 3 points. 8 hours laboratory. Conference weekly. Report required. Professor O. S. MORGAN  
 Fee \$18

### Architecture

**Architecture e2—Applied elements.** Credit V. 8 points. Professor HARRIMAN

8-9:40 p. m., Tuesday and Friday, Room 504 Avery. Fee \$48

Exercises in applications of elementary architectural forms as given in Course e1 (Winter Session); of shades and shadows as given in Course e5 (Winter Session) both of which are prerequisite.

**Architecture e6—Descriptive geometry.** Credit V. 4 points. Mr. ALLEN  
 8-8:50 p. m., Monday, Wednesday, and Friday, Room 408 Avery. Fee \$24

Rapid and unique methods of solving problems relating to right lines and planes; phenomena of lines and surfaces; tangent planes; intersections and developments.

Will not be given for less than ten students.

**Architecture e6a—Shades and shadows.** Credit V. 4 points. Mr. ALLEN  
 7-7:50 p. m., Monday, Wednesday, and Friday, Room 407 Avery; Drafting, in Room 504 Avery. Fee \$24

Architecture e5 repeated in Spring Session. Not given for less than ten students.

**Architecture e8a—Perspective.** Credit V. 3 points. Mr. ALLEN

7-7:50 p. m., Tuesday and Thursday, Room 408 Avery; Drafting: 8-10 p. m., Wednesday, Room 504 Avery. Fee \$18

Architecture e7 repeated in the Spring Session.

**Architecture e12—Specifications.** Credit V. 3 points. Mr. SANDERS

8-8:50 p. m., Monday and Friday, Room 403 Avery. Fee \$18

An explanation of the general law of contracts; the different ways of preparing specifications for estimates, with the advantages and disadvantages of each; instructions to bidders; general clauses; rules to be observed in writing specifications and the different methods of arranging clauses.

Will not be given for less than ten students.

Open only with the consent of the instructor.

**Architecture e16—Building materials and construction.** Credit V. 3 points. Mr. HAMMEL

8-8:50 p. m., Monday and Friday, Room 407 Avery. Fee \$18

Properties and tests of building materials. Carpentry, slow-burning construction, steel and iron construction, masonry, fireproofing, reinforced concrete and their appearance in buildings.

**\*Architecture e28—Medieval architecture (to Gothic).** Credit I. 2 points. Curator BACH

4-4:50 p. m., Tuesday and Thursday, Room 408 Avery. Fee \$12

**Architecture e32—Ancient ornament.** Credit I, V. 1 point. Mr. HAMLIN  
 6-6:50 p. m., Friday, Room 407 Avery. Fee \$6

**Architecture e36—Modern ornament.** Credit I, V. 1 point. Mr. HAMLIN  
 6-6:50 p. m., Wednesday, Room 408 Avery. Fee \$6



**Architecture e52—Principles of composition.** Credit V. 2 points. Professor BORING and Mr. CORBETT

7-7:50 p. m., Wednesday, Room 403 Avery. Fee \$12

Elements described. Composition of elevation and sections, typical motives and specific type of buildings, with regard to expression, mass, profile, proportion, voids and solids, texture and color

**Architecture e72—Drawing.** Credit V. 2 points. Professor HARRIMAN  
8-9:40 p. m., Monday and Thursday, Room 502 Avery. Fee \$12

**Architecture e76—Drawing.** Credit V. 2 points. Professor HARRIMAN  
8-9:40 p. m., Monday and Thursday, Room 502 Avery. Fee \$12

**Architecture e80—Drawing.** Credit V. 2 points. Professor HARRIMAN  
8-9:40 p. m., Monday and Thursday, Room 504 Avery. Fee \$12

Drawing in outline; isometric; from cast, pencil, and charcoal.

Architecture e71 repeated in Spring Session.

## ARCHITECTURAL DESIGN

The courses in architectural design are conducted on the basis of a progressive series of problems and sketches. These are assigned in the form of program issued at stated intervals. The work of the students, delivered at a designated time, is passed upon by a jury of architects, the whole program being in this respect identical with that of the Beaux-Arts Institute of Design. A registration fee of two dollars is required by this Society; this must be paid to the Chairman of the Committee on Education, of the Institute, 126 East 75th Street, New York City. More detailed information on this head will be found in a special folder to be obtained in Room 405 Avery Hall.

**Tuition Fees for Design.** The tuition fee in design, regardless of course, is \$25 per Session.

*Tuition fees are under no conditions returnable even though the full Session's work is not taken.*

Students are advanced in accordance with the regulations of the Beaux-Arts Institute of Design on the basis of values obtained.

*Note.* The full fee covers registration for six regular problems of the Beaux-Arts Society. No additional fee is required for ten-hour sketches, or for archaeology or measured drawing problems. Upon previous application to Curator BACH, 405 Avery Hall, qualified students may also be admitted without additional fee to other problem competitions conducted by the School of Architecture.

Sketches and problems will be accepted only after tuition fees have been paid as indicated above.

**Prerequisites for all courses.** Work in the elements of architecture and shades and shadows, corresponding respectively to Architecture e1, e2, and e3, or their equivalents, such equivalents to be determined by Mr. WARE **before registration.** Those who wish subsequently to transfer their credits to the records of the School of Architecture must also submit Descriptive Geometry Architecture e6, or its equivalent.

Students may meet the instructors in Room 202 Avery.

**Architecture e62—Elementary design.** Credit V.<sup>1</sup> 20 hours. Associate

WARE and Mr. CORBETT

Fee, see above. Room 602 Avery

Major and minor problems corresponding to the Class B Analytique Problems of the Beaux-Arts Institute of Design.

**Architecture e64—Intermediate design.** Credit V.<sup>1</sup> 20 hours. Associate

WARE and Mr. CORBETT

Fee, see above. Room 602 Avery

Major and minor problems corresponding to the Class B Problems (Projets) of the Beaux-Arts Institute of Design.

**Architecture e66—Advanced design.** Credit V. 20 hours. Associate

WARE and Mr. CORBETT

Fee, see above. Room 602 Avery

Major and minor problems corresponding to the Class A Problems (Projets) of the Beaux-Arts Institute of Design.

**Architecture e68—Thesis.** Credit V. 4 points. Associate WARE and Mr.

CORBETT

Fee \$24

An important final problem in design. Instructions will be sent to those qualified.

## ASTRONOMY

**Astronomy e2—Introduction to the science.** Credit I. 2 points. Dr.

BRAININ

7:10–9 p. m., Friday, Wilde Observatory. Fee \$12

Astronomy e1 repeated in the Spring Session.

**Astronomy e104—Navigation.** 2 hours lectures and conferences and 2 hours observation work per week. Hours for observation work to be arranged. 4 points.

Mr. SWENSON

7:30–9:30 p. m., Wednesday, Room 401 Schermerhorn. Fee \$24

**Extension students who are qualified will also be admitted to the following course:**

**Astronomy 2—General astronomy.** Introductory course. 3 points. Professor JACOBY

11 a. m., Tuesday and Thursday, Room 305 Schermerhorn, and fortnightly evening attendance in the Wilde Observatory, counting as a three-point course involving laboratory work. Fee \$18

Prerequisite: Mathematics A.

## BOOKKEEPING

**Bookkeeping e2—Secretarial bookkeeping.** 4 points. Fee \$24. Mr. C. C. HUGHES

<sup>1</sup> Students desiring credit for this course in the School of Architecture must submit a complete set of drawings done in Extension Teaching up to the time of the application for transference of credit and bearing the attestation of the instructor in charge. Requests for such transference of credit should be made to Curator R. F. BACH, School of Architecture, or left in writing for him at the office of the Director of Extension Teaching. The difference in tuition fees must be paid.

Section 1—4:30-6:10 p. m., Wednesday, and 9-10:40 a. m., Saturday, Room 511 Journalism.

Section 2—4:15-6 p. m., Monday and Friday, Room 503 Journalism.

This course is the same as Bookkeeping *et*, given in the Spring Session.

## BOTANY

**Botany e2—Nature and development of plants.** Lectures and laboratory Credit I, IV. 4 points. Dr. DODGE and Mr. GOLDSMITH

4-6:30 p. m., Monday and Thursday. 4-5 p. m., Room 505 Schermerhorn; 5-6:30 p. m., Room 502 Schermerhorn. Fee \$24

**Botany e2a—General botany.** Lectures and laboratory. Credit I, IV. 2 points. Dr. DODGE and Mr. GOLDSMITH

1:10 p. m., Saturday, Room 505 Schermerhorn; laboratory, 2:10-4 p. m., Room 502 Schermerhorn. Fee \$12

**Botany e4—Edible and poisonous fungi.** Credit IV. 2 points. Dr. DODGE  
2:10 p. m., Saturday, Room 505 Schermerhorn; 3-4 p. m., laboratory, Room 502 Schermerhorn. Fee \$12

**Botany e6—Students having completed the preceding courses may continue their work by registering for this class, the hours and character of the work to be determined upon consultation with Professor HARPER.** Credit I. 2 points. Fee \$12

## BUSINESS

### *Undergraduate Courses*

**Business e8—Business organization and administration.** Credit IX. 2 points. Fee \$12. Professor HAIG and Mr. STOCKDER

Section 1—4:10-6:00 p. m., Tuesday, Room 507 Journalism

Section 2—7:40-9:30 p. m., Tuesday, Room 507 Journalism

Open with the consent of the instructor.

The course is designed as a general survey of modern business procedure.

**Business e16a—Practical advertising.** Credit IX. 2 points. Mr. HUBBART  
7:40-9:30 p. m., Monday, Room 507 Journalism. Fee \$12

A course in copy writing.

**Business e18—Sales management.** Credit IX. 2 points. Mr. HUBBART  
7:40-9:30 p. m., Thursday, Room 610 Journalism. Fee \$12

Deals with the more important elements of executive organization in highly departmentized commercial establishments; secondary phases of the work include a presentation of modern methods in the training of sales help with a view to increased individual efficiency and an analysis of the selling methods of typical business houses. Designed for those intending to engage in practical managerial work and for teachers of business subjects. Prerequisite: Business e18a.

**Business e18a—Salesmanship.** Credit IX. 2 points. Mr. HUBBART  
7:40-9:30 p. m., Tuesday, Room 603 Journalism. Fee \$12

Selling and the prime essentials of salesmanship.

The distinct forms of sales are illustrated with typical problems in selling at retail, wholesale, the marketing of specialties and problems in promotion. The student is familiarized with the essential features in the linking of sales and advertising campaigns in the creation and development of business backgrounds.



**Business e20—Retail advertising.** Credit IX. 2 points. Mr. SINSHEIMER  
7:40-9:30 p. m., Wednesday, Room 512 Journalism. Fee \$12

This course deals with the nature and purpose of retail advertising as a factor in the sale of goods and the building of business and prestige for retail stores.

Prerequisites: Practical Advertising and Retail Merchandising.

**Business e24—First year accounting.** Part II. Credit IX. 2 points.  
Fee \$12. Messrs. BAKER, BALTZ, BENNETT, KOOPMAN, WOOLHOUSE, and Miss MILLER

Section 1—7:40-9:30 p. m., Monday, Room 511 Journalism

Section 2—7:40-9:30 p. m., Tuesday, Room 511 Journalism

Section 3—7:40-9:30 p. m., Wednesday, Room 713 Journalism

Section 4—7:40-9:30 p. m., Thursday, Room 511 Journalism

Section 5—7:40-9:30 p. m., Friday, Room 511 Journalism

Section 6—4:30-6:10 p. m., Friday, Room 511 Journalism

Open only with the consent of the instructors.

**Business e24a—First year accounting.** Part I. Credit IX. 2 points.  
Fee \$12. Messrs. BARBER and C. C. HUGHES

Section 1—7:40-9:30 p. m., Thursday, Room 712 Journalism

Section 2—7:40-9:30 p. m., Wednesday, Room 712 Journalism

Section 2 will be formed only in case there are fifteen or more applications.

Identical with Business e23, but offered in the Spring Session for those beginning the study of accounting.

**Business e26—Second year accounting.** Part II. Credit IX. 2 points.  
Fee \$12. Messrs. J. F. HUGHES and KOOPMAN

Section 1—7:40-9:30 p. m., Monday, Room 713 Journalism

Section 2—7:40-9:30 p. m., Thursday, Room 713 Journalism

Open only with the consent of the instructor.

Will consist of carefully classified problems, supplemented by lectures and demonstrations.

**Business e26a—Second year accounting.** Part I. Credit IX. 2 points.  
Mr. KOOPMAN

7:40-9:30 p. m., Tuesday, Room 713 Journalism. Fee \$12

Identical with Business e25. Prerequisite: Business e23-24.

**Business e28—Cost accounting.** Part II. Credit IX. 2 points. Fee \$12.  
Messrs. HOWARD and ROHRBACH

Section 1—7:40-9:30 p. m., Wednesday, Room 511 Journalism

Section 2—7:40-9:30 p. m., Friday, Room 713 Journalism

Examination of plants; devising of cost systems; estimating of cost systems; departmental cost systems; special order systems according to productive labor and machine cost plans; productive systems according to productive labor and machine cost plans.

Open only with the consent of the instructor.

**For other courses in accounting, see p. 15**

**Business e46—Corporation finance.** Credit IX. 2 points. Professor H. LYON

7:40-9:30 p. m., Monday, Room 512 Journalism. Fee \$12

The finding of funds for the capital account; financing through an appeal to the stockholders and stockholders' "rights"; work and methods of the banking houses in financing corporations and

inducing capitalists to commit funds to the enterprise; making a "market," syndicate transactions, joint accounts and underwritings; management of incomes; financing of receiverships, readjustments of the capital account and reorganizations.

**Business e62—Business mathematics.** 2 points. Mr. VAN TUYL  
7:40-9:30 p. m., Tuesday, Room 605 Journalism. Fee \$12

Presupposes a working knowledge of elementary business arithmetic and will include such topics as insurance, taxes, sinking funds, stocks, bonds, exchange, United States customs and equation of accounts. Calculating tables will be introduced and used in solving problems. The work is designed to be helpful to teachers of business arithmetic in secondary schools and in private business schools; also to accountants and others in banks and brokerage houses.

**Business e62a—Elementary business mathematics.** 2 points. Mr. VAN TUYL

6-7:40 p. m., Tuesday, Room 605 Journalism. Fee \$12  
Business e61, repeated in the Spring Session. Given if called for.

**Business e74—Contracts.** Credit IX. 2 points. Professor GIFFORD  
7:40-9:30 p. m., Thursday, Room 515 Kent. Fee \$12

**Business e76—Negotiable instruments.** Credit IX. 2 points. Mr. CURRIER

7:40-9:30 p. m., Wednesday, Room 515 Kent. Fee \$12

The object of this course is to acquaint students with the history of negotiable paper and to give them a correct idea of the legal principles governing the rights and duties of the various parties to it. It is not intended for law students but for persons who intend to engage in business. An attempt will be made to discuss the everyday questions which confront the business man in his use of bills, notes, and checks and to teach the student how to solve them.

Text-book: Smith and Moore's *Cases on Bills and Notes*.

**Business e78—Life insurance.** Credit IX. 2 points. Mr. LUNGER  
5:30-7:20 p. m., Friday, Room 213 Hamilton. Fee \$12

**Business e86—Latin-American commercial law.** Credit IX. 2 points  
Mr. OBREGON

7:40-9:30 p. m., Thursday, Room 707 Journalism. Fee \$12

**Business e92—Commercial geography.** Credit I, IV. 2 points. Mr. STOCKDER

3:10-5 p. m., Tuesday, Room 610 Journalism. Fee \$12

### *Graduate Courses*

These courses are open to qualified students without restriction.

**Business e108—Advanced business organization and administration**  
Credit II, IX. 3 points. Professor HAIG

4:10-6 p. m., Thursday, Room 503 Journalism. Fee \$18

Open with the consent of the instructor.

**Business e110—Problems of personnel management.** Credit II, IX  
3 points. Mr. TEAD

7:30-9:20 p. m., Friday, Room 610 Journalism. Fee \$18

This course is especially designed for those who are training for or engaged in the work of dealing with employees in stores and factories. It will deal primarily with the problems that center about the maintenance of an efficient and willing working force.

**Business e112—The marketing of manufactured products.** Credit II, IX. 2 points. Professor HAIG

7:40–9:30 p. m., Tuesday, Room 610 Journalism. Fee \$12

A treatment of the problems involved in the distribution of manufactured products, including a consideration of such topics as market analysis, marketing organizations and methods, the function of advertising, private brands, price problems, and price maintenance.

**Business e118—Psychology of advertising and selling.** Credit II, IX. 3 points. Miss STICKLAND

7:40–9:20 p. m., Monday, Room 407 Schermerhorn. Fee \$18

**Business e130—Third year accounting.** Part II. Credit II, IX. 2 points. Mr. KESTER

7:40–9:30 p. m., Friday, Room 712 Journalism. Fee \$12

Open with the consent of the instructor.

**Business e132—Auditing, theory and practice.** Credit II, IX. 2 points. Professor MONTGOMERY and Mr. BAKER

7:40–9:30 p. m., Thursday, Room 507 Journalism. Fee \$12

Open with the consent of the instructor.

**Business e134—Accounting laboratory.** Credit II, IX. 2 points. Fee \$12. Mr. BYRNES

Section 1—7:20–9:30 p. m., Monday, Rooms 503 and 505 Journalism

Section 2—7:20–9:30 p. m., Wednesday, Rooms 503 and 505 Journalism

**Business e148—Investments.** Credit II, IX. 3 points. Professor H. LYON

7:40–9:30 p. m., Tuesday, Room 512 Journalism. Fee \$18

**Business e168a—Railway traffic and rates.** Credit II, IX. 3 points. Professor VAN METRE

5:20–7 p. m., Wednesday, Room 213 Hamilton. Fee \$18

Business e167 repeated in Spring Session for new students.

**Business e172—The principles and practices of factory management.** Credit II, IX. 3 points. Professor RAUTENSTRAUCH

7–9 p. m., Monday, Room 603 Hamilton. Fee \$18

This course is adapted to men in the industries who are in charge of departments of factories. Other men qualified by contact with production problems are also admitted.

Open only by special permission of the instructor.

**History e178—Latin America; industry; transportation; commerce.** Part II. Credit II, IX. For those taking both hours, 3 points. Professor SHEPHERD

Lecture, 7:30–8:20 p. m., conference, 8:20–9:10 p. m., Monday, Room 615 ent. Fee \$18

### *Economics*

**\*Economics e2—Principles of economics.** Part II. Credit I, IV. 3 points. Fee \$18. Professors R. C. MCCREA and VAN METRE

Section 1—7:30–10 p. m., Wednesday, Room 605 Journalism

Section 2—7:30–10 p. m., Thursday, Room 605 Journalism

Section 3—4:30–5:45 p. m., Wednesday and Friday, Room 507 Journalism



**Economics e2a—Principles of economics.** Part I. Credit I, IV. 3 points. Fee \$18. Mr. ARDZROONI

Section 1—4:30–5:45 p. m., Tuesday and Friday, Room 605 Journalism

Section 2—7–9:30 p. m., Wednesday, Room 603 Journalism

Economics e1 repeated in the Spring Session for new students. A beginning class.

**Economics e160—Women in gainful occupations.** Credit II. 3 points. Miss HUTCHINSON

7:30–9:30 p. m., Monday, Room 707 Journalism. Fee \$18

Intended for those who wish to make a study of the economic position of women in commercial and professional pursuits. Lectures and discussions will be combined with approximately six hours of field work under the direction of the Information Department of the Intercollegiate Bureau of Occupations. The class is limited to twelve and open only to college graduates.

**Extension students who are qualified will also be admitted to the following courses:**

**Economics 102—Science of finance.** 3 points. Professor SELIGMAN  
1:10 p. m., Monday and Wednesday, Room 515 Kent. Fee \$18

**Economics 108—Railroad problems; economic, social and legal.** 3 points. Professor SELIGMAN

3:10 p. m., Monday and Wednesday, Room 515 Kent. Fee \$18

## CAMOUFLAGE

Special courses are offered in Military Camouflage and Marine Camouflage. Those interested should apply to Curator RICHARD F. BACH, Room 405 Avery Hall.

## CHEMISTRY

**Chemistry eA2—General chemistry.** Course eA1 repeated in the Spring Session for students desiring to begin in February. Credit I, IV. 4 points. Mr. HAESELER and assistants

7–9:50 p. m., Tuesday, and 7–8:50 p. m., Friday. Fee \$24

Lecture, 7–7:50 p. m., Tuesday and Friday, Room 311 Havemeyer

Recitation, 8–8:50 p. m., Friday, Rooms 307, 311 Havemeyer

Laboratory, 8–9:50 p. m., Tuesday, Room 615 Havemeyer

Deposit for breakage, \$20.

**\*Chemistry eA4—General chemistry.** Part II. Credit I, IV. 2 points. Mr. A. H. WRIGHT

2–4 p. m., Saturday. Fee \$12

Lecture 2:30–3:30 p. m.; recitation, 2–2:30 p. m., Room 311 Havemeyer. Alternate Saturdays

Laboratory 2–4 p. m., Alternate Saturdays, Room 615 Havemeyer

**\*Chemistry e4—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points. Identical in content and credit with Chemistry e6–7. Mr. HAESELER and assistants

7–9:50 p. m., Tuesday, Wednesday and Friday. Fee \$30

Lecture, 9–9:50 p. m., Tuesday, Wednesday and Friday, Room 311 Havemeyer

Laboratory, 7-8:50 p. m., Tuesday, Wednesday and Friday, Room 615 Havemeyer

Deposit for breakage, \$20.

**Chemistry e6—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points. Professor NEISH and assistants

7-9:50 p. m., Tuesday, Wednesday and Friday. Fee \$30

Lecture, 7-8:15 p. m., Tuesday and Friday, Room 309 Havemeyer

Laboratory, 8:25-9:50 p. m., Tuesday and Friday, and 7-9:50 p. m., Wednesday, Room 615 Havemeyer

Deposit for breakage, \$25.

**Chemistry e12—Qualitative analysis.** Part II. 1 hour classroom and 6 hours' laboratory work a week. Credit I, IV, V. 4 points. Miss HOKE

7-9:50 p. m., Tuesday; 7-8:50 p. m., Wednesday and Friday. Fee \$24

Lecture, 7-7:50 p. m., Wednesday, Room 307 Havemeyer

Laboratory, 7-9:50 p. m., Tuesday; 8-8:50 p. m., Wednesday; and 7-8:50 p. m., Friday, Room 615 Havemeyer

Deposit \$25.

**Chemistry e14—Qualitative analysis.** 2 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points. Miss HOKE

7-9:50 p. m., Tuesday and Wednesday and 7-8:50 p. m., Friday. Fee \$30

Lecture, 7-7:50 p. m., Tuesday and Friday, Room 307 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday; 7-9:50 p. m., Wednesday; and 8-8:50 p. m., Friday, Room 602 Havemeyer

Identical with Chemistry e11, but given in the Spring Session. Should be followed by Chemistry e15.

Prerequisite: Chemistry e6-7, 6-7, e3-4 or 3-4.

Deposit for breakage, \$25.

**Chemistry e46—Organic chemistry.** Part II. Short course. 1½ hours' classroom and 3 hours' laboratory work a week. Credit I, IV. 3 points. No credit for Chemistry e45 or e46 separately. Dr. FISHER and assistant

7-9:15 p. m., Tuesday and Friday. Fee \$18

Lecture, 7-7:40 p. m., Tuesday and Friday, Room 413 Havemeyer

Laboratory, 7:40-9:15 p. m., Tuesday and Friday, Room 602 Havemeyer

A brief survey of the more important classes of organic compounds.

Deposit for breakage, \$30.

Prerequisites: Chemistry e3-4, e6-7, or the equivalent, and elementary physics. Chemistry e11 or e14 is recommended also.

Open with the special consent of the instructor.

## DECORATIVE DESIGN

**Decorative design e62—Elementary design.** 20 hours. Mr. CHAFLIN  
Criticism hours, 7-10 p. m., Tuesday and Thursday, Room 602 Avery. Fee \$25

Major and minor problems corresponding to the Class B Elements Problems of the Beaux-Arts Institute of Design.

**Decorative design e64—Intermediate design.** 20 hours. Mr. CHAFLIN  
Criticism hours, 7-10 p. m., Tuesday and Thursday, Room 602 Avery. Fee \$25

Major and minor problems corresponding to the Class B Problems (Projets) of the Beaux-Arts Institute of Design.

**Decorative design e66—Advanced design.** 20 hours. Mr. CHAFLIN  
Criticism hours, 7-10 p. m., Tuesday and Thursday, Room 602 Avery. Fee \$25

Major and minor problems corresponding to the Class A Problems (Projets) of the Beaux-Arts Institute of Design.

Since the work is competitive the tuition covers criticism, not credits.

For further information in regard to the courses in Decorative Design, consult Curator RICHARD F. BACH, Room 405 Avery Hall; also see special circular.

## DRAWING

**Drawing eW2—Freehand drawing.** 2 points. Mr. BEANS  
1:30-5:30 p. m., Saturday, Room 504 Avery. Fee \$12

Will consist of practice in the elements of freehand perspective, and in drawing from casts or machine parts in outline, and in light and shade.

The completion of this course will be accepted as satisfying the entrance requirement in drawing.

## ECONOMICS

*See Business, pp. 15, 16*

## ENGINEERING

*Civil Engineering*

NOTE. With the exception of Civil engineering e2 these courses are intended solely for men already engaged in practical work. They do not correspond to day courses and no university credit is allowed for them. Students should note the prerequisites and are urged to confer with the instructor when in doubt as to the requirements. In connection with the courses in surveying attention is called to the complete practical courses given during the summer at Camp Columbia, Morris, Conn. These courses are open to properly qualified students who have fulfilled the necessary prerequisites. For further information address the Secretary, Columbia University, New York.

**\*Civil engineering e2—Theory of plane surveying.** Part II. Credit I, V.  
2 points. Mr. KREFELD

7:30-9:10 p. m., Wednesday, Room 306 Engineering. Fee \$12

Surveys and computations; Land surveying, including farm, city and public land surveys, computation of coordinates and areas, parting off land, description, and relocation. Topographic surveying, transit and stadia method, theory and reduction of stadia measurements, the plane table and government work. Hydrographic, mine and construction surveys. Winter Session prerequisite for Spring Session.

**Civil engineering eY2—Plane and reinforced concrete construction.**  
Part II. 2½ points. Professor FINCH

7:30-9:10 p. m., Thursday, Room 306 Engineering. Fee \$15

Theory, design and construction. Bearing power of soils, earth and water pressure and loads. Gravity and cantilever retaining walls. Counterfoot reservoir wall. Slab and buttress dam. Design of forms for same. Design of pipes and standpipe. Highway slab and girder bridges. Loft building, including foundations and typical beams and columns. Winter Session prerequisite to Spring Session.



**Civil engineering e4—Foundations and masonry construction.** Part II.  
2 points. Professor FINCH  
7:30–9:10 p. m., Monday, Room 306 Engineering. Fee \$12

### *Electrical Engineering*

**Electrical engineering e2—Principles of direct current machinery.**  
Lectures and laboratory. 3 points. Mr. F. R. KELLER  
7:30–9:10 p. m., Tuesday and Friday, Room 302 Engineering. Fee \$18  
Designed to give the student a knowledge of the construction and characteristics of direct-current generators and motors.  
Covers the theory of generators and motors. Laboratory work consists of experimental work with shunt and compound generators and shunt, series and compound motors.  
Prerequisite: Electrical engineering e1.  
NOTE. A deposit of \$10 to cover possible breakage is required of students taking Electrical engineering e2.  
Open with the consent of the Instructor.

**Electrical engineering e4—Principles of alternating current machinery.**  
Lectures and laboratory. 3 points. Professor SLICHTER  
7:30–9:10 p. m., Monday and Thursday, Room 302 Engineering. Fee \$18  
Designed to give the student a general knowledge of the construction and characteristics of alternating current machinery.  
Considers the theory and operation of the principal types of alternating current machinery. Laboratory work consists of some experimental work with the alternator, transformer, induction and synchronous motors, rotary converter and the parallel operation of alternators.  
Prerequisite: Electrical engineering e3.  
NOTE. A deposit of \$10 to cover possible breakage is required of students taking Electrical engineering e4.

**Electrical engineering e6—Wireless telegraphy and telephony.** Part II.  
2 points. Mr. CURRY  
7:30–9:20 p. m., Wednesday, Room 510 Fayerweather. Fee \$12

### *Mechanical Drafting*

**Drafting e2—Mechanical drafting.**<sup>1</sup> Part II. 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points. Professor HARRINGTON and assistant  
7:20–10 p. m., Tuesday and Friday, Room 406 Engineering. Fee \$12

**Drafting e2a—Mechanical drafting.**<sup>1</sup> Part I. 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points. Professor HARRINGTON and assistant  
7:20–10 p. m., Tuesday and Friday, Room 406 Engineering. Fee \$12

Drafting e1 repeated in the Spring Session for students entering in February.

**Drafting e4—Descriptive geometry.** Part II. 2 hours' lectures per week. Credit I, V. 2 points. Professor HARRINGTON  
6:30–7:20 p. m., Tuesday and Friday, Room 307 Engineering. Fee \$12

**Drafting e6—Graphics.**<sup>1</sup> 3 hours' drafting-room work per week. 1 point. Professor HARRINGTON  
7:20–10 p. m., Tuesday or Friday, Room 406 Engineering. Fee \$6

<sup>1</sup>Students will be required to furnish their own drafting instruments and materials.

This course treats of the elements of shades and shadows, perspective, and stonecutting. The solution of problems in the shades and shadows of lines, planes, and groups of solids, including the niche and torus, gives a fair working knowledge of this subject, while a sufficient number of plates are given in perspective and stone cutting to illustrate in detail the principles involved.

Prerequisite: Elements of mechanical drafting and descriptive geometry.

**Drafting e8—Structural drafting.**<sup>1</sup> 3 hours' drafting-room work per week.  
1 point. Professor HARRINGTON

7:20–10 p. m., Tuesday or Friday, Room 406 Engineering. Fee \$6

This course includes methods used in framing and detailing in structural work, standard connections, beams, columns, plate girders and roof trusses.

Prerequisites: Elements of mechanical drafting.

**Drafting e8a—Structural drafting.**<sup>1</sup> 6 hours' drafting-room work per week.  
2 points. Professor HARRINGTON

7:20–10 p. m., Tuesday and Friday, Room 406 Engineering. Fee \$12

This course is similar in character to Drafting e8, but covers the ground more thoroughly.

Prerequisite: Elements of mechanical drafting.

### *Structural Mechanics*

**Structural mechanics eX2—Elements and applications of trigonometry.**  
2 points. Mr. R. F. CLARK

6:10–7 p. m., Monday and Thursday, Room 203 Hamilton. Fee \$12

The aim of this course is twofold: first, to give to the student beginning the study of structural mechanics a clear understanding of the mathematics necessary for further study of the subject; second, to fit him to handle his present practical problems with greater facility.

A course in plane trigonometry and its application to problems of a practical nature. A thorough drill in the use of logarithms and the slide rule will be included. Students are urged to present for class discussion problems arising in their work.

Open with the consent of the Instructor.

**Structural mechanics eZ2—Elements of mechanics of materials.** 3 points. Professor BURNSIDE

6:10–7 p. m., Tuesday and Thursday, Room 510 Fayerweather. Fee \$18

Moments of inertia and radii of gyration of plane areas, built-up beam and column sections; direct tension, compression and shear; strength of beams, columns and riveted joints; deflection of beams.

Open with the consent of the Instructor.

### ENGLISH

For advice in regard to courses designated English A, students should consult Mr. CLARK, Room 710 Journalism Building; in regard to courses in short story writing, Professor BLANCHE COLTON WILLIAMS; and in regard to courses in preparatory English, Mr. DUNCAN, Room 711 Journalism Building.

### *Undergraduate Courses*

**\*English eA2—English composition.** Part II. Lectures, themes and conferences. Credit I, IV. 3 points. Fee \$18

Section 1—3:10–4:25 p. m., Monday and Thursday, Room 603 Journalism.  
Mr. D. L. CLARK

<sup>1</sup> Students will be required to furnish their own drafting instruments and materials.

Section 2—3:10-4:25 p. m., Monday and Thursday, Room 605 Journalism.  
Dr. BREWSTER

Section 3—3:10-4:25 p. m., Tuesday and Friday, Room 603 Journalism.  
Mr. D. L. CLARK

Section 4—3:10-4:25 p. m., Tuesday and Friday, Room 713 Journalism. Dr.  
SCARBOROUGH

Section 5—4:30-5:45 p. m., Monday and Thursday, Room 713 Journalism.  
Dr. BREWSTER

Section 6—7-8:15 p. m., Monday and Thursday, Room 503 Hamilton. Dr.  
WOLFF

Section 7—7-8:15 p. m., Tuesday and Friday, Room 503 Hamilton. Dr. COAD  
Section 8—3:10-4:25 p. m., Monday and Thursday, Room 713 Journalism. Dr.  
JONES

**English eA4—English composition.** Lectures, themes and conferences.  
Credit I, IV, if taken both Sessions. 1½ points. Dr. WOLFF  
9-10:15 a. m., Saturday, Room 611 Journalism. Fee \$9

**English eA8—English composition.** Part I. Lectures, themes and conferences. Credit I, IV. 3 points. Fee \$18

Section 1—3:10-4:25 p. m., Tuesday and Friday, Room 707 Journalism. Dr.  
JONES

Section 2—3:10-4:25 p. m., Monday and Thursday, Room 707 Journalism.  
Mr. WEAVER

Section 3—7-8:15 p. m., Tuesday and Friday, Room 707 Journalism. Mr. D. L.  
CLARK

Course eA1 given in the Spring Session for new students.

**English eB2—English literature and composition.** Lectures, themes and conferences. Credit I, IV. 2 points. Dr. WOLFF  
8:45-9:35 p. m., Monday and Thursday, Room 503 Hamilton. Fee \$12

**English eB4—Introduction to poetry.** Credit I, IV. 3 points. Dr.  
HALLER

3:10-4:25 p. m., Tuesday and Friday, Room 408 Avery. Fee \$18

Open with the consent of the instructor.

**English eB6—Survey of English literature.** Credit I, IV. 3 points. Mr.  
DIBBLE

3:30-4:25 p. m., Monday and Thursday, Room 408 Avery. Fee \$18

**English e2—Advanced composition. Magazine articles.** Part II.  
Credit I. 3 points. Mr. D. L. CLARK

7-8:15 p. m., Monday and Thursday, Room 603 Journalism. Fee \$18

**English e2a—English composition.** Advanced course. Lectures, themes and theme criticism. Credit I, IV. 1½ points. Dr. WOLFF

11 a. m.-12:15 p. m., Saturday Room 611 Journalism. Fee \$9



**English e2b—The short story.** English composition. Theory of fiction writing. Lectures, themes and criticism. 4 points. Fee \$24. Miss HULL

Section 1—3:10-4:25 p. m., Monday, Room 407 Avery

Section 2—7-8:15 p. m., Monday, Room 610 Journalism

Open with the consent of the instructor.

**English e2c—The short story.** Advanced course. English composition. Theory of fiction writing. 4 points. Fee \$24

Section 1—9:30-10:45 a. m., Saturday, Room 712 Journalism. Professor BLANCHE C. WILLIAMS

Section 2—3:10-4:25 p. m., Wednesday, Room 603 Journalism. Dr. SCARBOROUGH

Open with the consent of the instructors.

**English e2d—The short story.** Second advanced course. 4 points. Fee \$24

Section 1—11 a. m.-12:15 p. m., Saturday, Room 712 Journalism. Professor BLANCHE C. WILLIAMS

Section 2—8:20-9:35 p. m., Monday, Room 610 Journalism. Dr. SCARBOROUGH

Open with the consent of the instructors.

**English e2e—The writing of juvenile literature.** 4 points. Miss McLANE

11 a. m.-12:40 p. m., Saturday, Room 707 Journalism. Fee \$24

**English e2f—Advanced short story writing.** 5 points. Professor BLANCHE C. WILLIAMS

8-9:15 p. m., Wednesday, Room 610 Journalism. Fee \$30

**English e4a—Dramatic composition.** 3 points. Fee \$18. Miss M. LATHAM

Section 1—11:10 a. m.-12:25 p. m., Saturday, Room 507 Journalism.

\*Section 2—8:20-9:35 p. m., Friday, Room 507 Journalism.

**English e6a—History and theory of literary criticism.** 3 points. Dr. WOLFF

4-5:40 p. m., Thursday, Room 307 Engineering. Fee \$18

**English e12a—Public speaking.** Credit I, IV. 2 points. Fee \$12. Mr. HALLIDAY

Section 1—7:30-9:10 p. m., Wednesday, Room 206 Journalism

Section 2—7:30-9:10 p. m., Friday, Room 206 Journalism

This course will deal with public address. Its aim is to give practical training to men and women of whom speaking is demanded in their profession.

**English e14—Elocution.** Credit I, IV. 2 points. Fee \$12. Mrs. DAVIS

Section 1—9:20-11 a. m., Saturday, Room 407 Avery

Section 2—4-5:40 p. m., Wednesday, Room 408 Avery

A study of the elements of vocal expression (emphasis, phrasing, inflection, pitch, force, time, etc.)

**English e14a—Advanced elocution.** 2 points. Mrs. DAVIS

11 a. m.-12:40 p. m., Saturday, Room 407 Avery. Fee \$12

Planned for students who have taken the preceding course in elocution, English e13-14, or who have had an equivalent training. A study of the practical application of the principles studied during the Winter Session to the oral presentation of types of literature—such as the oration, the lyric, the essay, and dramatic narrative in prose and verse, will be made.

**English e14b—Elocution.** Credit I, IV. 2 points. Mrs. DAVIS

4:00–5:40 p. m., Monday, Room 308 Philosophy. Fee \$12

English e13 repeated in the Spring Session.

**English e16—English prosody.** Elementary course. 2 points. Mr. HOOKER

8:20–10 p. m., Thursday, Room 609 Journalism. Fee \$12

**English e18—Modern literature, English and foreign.** Credit I, IV.

2 points. Professor STEEVES

7:25–8:15 p. m., Monday and Thursday, Room 609 Hamilton. Fee \$12

**English e22—English literature from 1780–1830.** Credit I, IV. 2 points.

Dr. J. H. H. LYON

7:30–9:10 p. m., Thursday, Room 407 Avery. Fee \$12

This course will deal with English romanticism beginning with Cowper. After tracing the first signs of revolt against eighteenth century thought and ideals, it will treat of the new spirit as it expressed itself in the works of the poets and prose writers of the early part of the nineteenth century. While the course will include the work of men not especially well known, it will aim to embrace in considerable detail the poetry of Wordsworth, Shelley, Keats, and Byron. The work will be conducted by means of assigned readings and discussions.

**English e24—English literature from 1830–1890.** Credit I, IV. 2 points.

Professor PATTERSON

4:20–6 p. m., Wednesday, Room 407 Avery. Fee \$12

**English e36a—Shakspeare.** Credit I, IV. 2 points. Professor TASSIN

11 a. m.–12:40 p. m., Saturday, Room 603 Journalism. Fee \$12

**English e40—The English novel.** Credit I, IV. 2 points. Dr. BREWSTER

11 a. m.–12:40 p. m., Saturday, Room 605 Journalism. Fee \$12

Open with the consent of the instructor.

**English e42a—Contemporary dramatic literature.** 2 points. Mr. CLAY-

TON HAMILTON

10–11:40 a. m., Saturday, Room 612 Journalism. Fee \$12

### *Comparative Literature*

**Comparative literature e4—Masterpieces of European literature.** Credit

I, IV. 3 points. Dr. J. H. H. LYON

4:30–5:45 p. m., Tuesday and Friday, Room 408 Avery. Fee \$18

This course is designed to give students an intimate acquaintance with those works of literature which are called World Masterpieces. The method followed will be primarily according to types; but the historical importance of each work studied will be made evident. Rapid outside reading is required of books generally found in all public libraries. Lectures, discussions, and reports.

**Comparative literature e6—Greek and Latin classics in English trans-**

**lation.** Lectures, assigned readings, reports and discussions. Credit I, IV. 2 points. Professor REILEY and Mrs. ENDICOTT

3:10–4:25 p. m., Monday, Room 610 Journalism. Fee \$12

The study and interpretation through English translation of the major works of Greek and Latin literature.

**Comparative literature e8—Modern European literature.** Lectures, readings and discussions. 2 points. Dr. BREWSTER

4:30–5:45 p. m., Wednesday, Room 707 Journalism. Fee \$12

Recent English, French, and Italian literature.

**Comparative literature e10—Modern Russian literature.** Lectures, readings and discussions. 2 points. Dr. BREWSTER

3:10-4:25 p. m., Wednesday, Room 707 Journalism. Fee \$12

A study of contemporary Russian novelists and fiction writers. The works of Gogol, Tolstoy, Dostoevsky, Turgenev, Chekhov, and others will be discussed.

**Comparative literature e12—Modern poetry.** 2 points. Miss HULL

3:10-4:25 p. m., Thursday, Room 609 Journalism. Fee \$12

This course deals with modern poetry of Europe and America. It includes a study of the development of present tendencies in poetic conceptions with some analysis of the social background of which the poetry is an expression, and a study of modern poetic forms.

Open with the consent of the instructor.

### *Graduate Courses*

**English e206—Standard English pronunciation, with special reference to the conditions of American speech.** Credit II. 3 points. Professor KRAPP

10-11:50 a. m., Saturday, Room 608 Philosophy. Fee \$18

**English e232—English literature in the seventeenth century.** Credit II. 3 points. Professor TRENT

5:10-6 p. m., Tuesday and Friday, Room 307 Philosophy. Fee \$18

This course covers the development of English literature during the seventeenth century, more especially the poetry. Special emphasis is laid on the work of Milton.

(This course is substituted for English e234.)

**English e238—English literature, 1832-1880.** Credit II. 3 points. Professor THORNDIKE

5:10-6 p. m., Monday and Wednesday, Room 307 Philosophy. Fee \$18

### *Preparatory Courses*

**English eV2—Elementary English.** 2 points. Miss DILLER

5-5:50 p. m., Wednesday and Friday, Room 214 Hamilton. Fee \$12

**English eW2—English composition.** 3 points. Fee \$18

Section 1—1:45-3:00 p. m., Monday and Thursday, Room 612 Journalism.

Mr. DUNCAN

Section 2—7:00-8:15 p. m., Monday and Thursday, Room 612 Journalism.

Mr. DUNCAN

\*Section 3—8:20-9:35 p. m., Monday, Room 507 Hamilton, and Thursday, Room 512 Journalism. Mr. PECK

**English eW4—English grammar.** 3 points. Mr. DUNCAN

8:20-9:35 p. m., Monday and Thursday, Room 612 Journalism. Fee \$18

Course eW1 repeated in the Spring Session.

**English eX2—English composition and literary readings.** Reading of classics, lectures, oral reports, class discussions, compositions, and written tests. 3 points. Fee \$18

Section 1—3:10-4:25 p. m., Monday and Thursday, Room 612 Journalism.

Mr. DUNCAN



Section 2—7:00-8:15 p. m., Monday, Room 507 Hamilton, and Thursday, Room 512 Journalism. Mr. PECK

**English eY2—Literature and composition.** Themes, lectures, class discussions, and tests. 3 points. Fee \$18

Section 1—3:10-4:25 p. m., Tuesday and Friday, Room 612 Journalism. Mr. DUNCAN

Section 2—7:30-10:00 p. m., Tuesday, Room 712 Journalism. Mr. PECK

Open with the consent of the instructors.

**English eZ2—English spelling and vocabulary.** 1 point. Fee \$6. Mr. DUNCAN

Section 1—4:30-5:20 p. m., Wednesday and Friday, Room 612 Journalism

Section 2—6:10-7 p. m., Monday and Thursday, Room 612 Journalism

**Business English e2—Business English and commercial correspondence.** 3 points. Fee \$18

Section 1—2-3 p. m., Tuesday and Friday, Room 612 Journalism. Mr. DUNCAN

Section 2—7:30-9:20 p. m., Wednesday, Room 612 Journalism. Mr. DUNCAN

Section 3—7:30-9:20 p. m., Friday, Room 612 Journalism. Mr. PECK

Open with the consent of the instructors.

**Business English e4—Business English and commercial correspondence.** 3 points. Mr. PECK

7:30-9:20 p. m., Wednesday, Room 707 Journalism. Fee \$18

Business English e1 repeated in the Spring Session.

## FINE ARTS

**Fine arts e52a—The paintings of the Metropolitan Museum of Art.** A study of the originals in the Museum. 2 points. Fee \$12. Dr. KRIEHN

8-9:30 p. m., Wednesday. Fee \$12

Section 1—2:30-4:10 p. m., Friday, Metropolitan Museum

Section 2—10:30 a. m.-12:10 p. m., Saturday, Metropolitan Museum

Section 3—3:15-4:55 p. m., Saturday, Metropolitan Museum

Section 4—10:30 a. m.-12:10 p. m., Monday, Metropolitan Museum

Section 4 will be given only if the other sections are filled

**Fine arts e54—Outlines of art history.** 2 points. Dr. KRIEHN

8:20-9:35 p. m., Monday, Room 407 Avery. Fee \$12

8:20-9:35 p. m., Monday, Room 307 Engineering. Fee \$12

## GEOLOGY

**Geology e2—Historical geology.** The origin of the earth and its development—succession of plant and animal life. Lectures and laboratory. Credit I, IV. 3 points. Dr. GALLOWAY

8:20-10 p. m., Tuesday and Friday, Room 401 Schermerhorn. Fee \$18

This course deals with the origin of continents and ocean basins and their development during successive geologic periods, characteristic sections and their interpretations, study of important types of fossils as indication of geologic age; the glacial period and the antiquity of man; development of surface features or physiography.

**Geology e4—Elementary petrography.** An introduction to the study of rocks, from thin sections, with the microscope. Laboratory demonstration method of work. Credit I, V. 3 points. Mr. COLONY

6:30–8:10 p. m., Tuesday and Friday, Room 401 Schermerhorn. Fee \$18

Methods of mineral identification; structural differences and classification of rocks. A standard set of fifty rocks is used as the basis of this course and particular attention is given to forms of description.

## GERMAN

**German eA2—Elementary course.** Part II. Credit I, IV. 4 points. Fee \$24.

Section 1—4:30–5:55 p. m., Tuesday, Wednesday, and Friday, Room 406 Hamilton. Professor HEUSER

*Section 2 is limited to men matriculated in Columbia College.*

Section 2—1:10–2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 507 Hamilton. Dr. BETZ

Prerequisite: one year of high-school German, or an equivalent.

**German eA8—Elementary course.** Part I. Credit I, IV. 4 points. Dr. BETZ

7–8:25 p. m., Monday, Wednesday, and Thursday, Room 402 Hamilton. Fee \$24

For students with no knowledge of German.

**German eB2—Intermediate course.** Part II. Credit I, IV. 4 points. Professor SCHULZE

4:30–5:55 p. m., Tuesday, Wednesday and Friday, Room 402 Hamilton. Fee \$24

Prerequisite: Intermediate entrance German eB1 or an equivalent.

**German eB4—Intermediate course.** Part I. Credit I, IV. 4 points. Dr. BETZ

4:30–5:55 p. m., Tuesday, Wednesday and Friday, Room 408 Hamilton. Fee \$24

Equivalent to eB1, but given in the Spring Session.

Prerequisite: elementary entrance, German eA2, or an equivalent.

**German eE2—Readings in science.** Part II. Credit I. 3 points. Mr. SCHOLZ

8:30–9:45 p. m., Monday and Thursday, Room 402 Hamilton. Fee \$18

**German eE4—Readings in science.** Part I. Credit I. 3 points. Dr. BETZ

4:30–5:45 p. m., Monday and Thursday, Room 406 Hamilton. Fee \$18

**German eJ2—Readings in newspapers and magazines.** Credit I, IV. 3 points. Dr. BETZ

7–8:15 p. m., Tuesday and Friday, Room 402 Hamilton. Fee \$18

**German e6a—Introduction to the classics.** Selected works of Goethe and Schiller. Credit I, IV. 2 points. Professor SCHULZE

2:30–4:10 p. m., Wednesday, Room 403 Hamilton, Fee \$12

Equivalent to eE1, but given in the Spring Session.

Prerequisite: intermediate entrance, eB2, or an equivalent.

**German 102—History of German literature.** From 1500 to 1800 A.D.

Credit II. 3 points. Professor BRAUN

11-11:50 a. m., Monday, Wednesday and Friday, Room 508 Philosophy. Fee \$18

**German 104—Goethe's Faust.** First and second parts. Credit II. 3 points.

Professor HERVEY

3:10-4 p. m., Tuesday and Thursday, Room 514 Philosophy. Fee \$18

**German 106—Modern and contemporary German drama** since the revolution of 1848. Credit II. 3 points. Professor HEUSER

2:10-3 p. m., Monday and Wednesday, Room 514 Philosophy. Fee \$18

Attention is also called to the courses in the Spoken Language (see special circular).

### GOVERNMENT

**Government e2—American government.** Credit I, IV. 3 points. Fee \$18.

Dr. BOOTS

3:10-4:25 p. m., Monday and Thursday, Room 703 Hamilton

Students may enter this course in the Spring Session without having had the Winter Session.

**Government 106—Municipal government.** Credit II. 3 points. Pro-

fessor MCBAIN

4:10-6 p. m., Monday, Room 515 Kent. Fee \$18

A study of the relation between the city and the state and of the organization, operation and problems of city government in the United States.

**Government 108—Comparative government and politics.** Credit II.

3 points. Professor SALT

4:10-6 p. m., Wednesday, Room 515 Kent. Fee \$18

### GREEK

Extension students who are qualified will be admitted to the following courses:

**Greek 156—Topography and monuments of Attica and Athens.** 3 points.

Professor YOUNG

3:10 p. m., Monday, Wednesday and Friday, Room 401 Avery. Fee \$18

**Greek 202—Greek literature.** Part I, poetry. 3 points. Professor VAN

HOOK

5:10 p. m., Wednesday and Friday, Room 712 Philosophy. Fee \$18

### HEBREW LITERATURE

**Hebrew literature e126—Hebrew literature and its formative influence in the literatures of Europe.** 2 points. Fee \$12. Professor CZARNOMSKA

Section 1-3-4 p. m., Tuesday and Thursday, Room 510 Fayerweather

Section 2-11 a. m.-1 p. m., Saturday, Room 510 Fayerweather



## HISTORY

**History eX2—American history.** Texts, discussions, readings, notes and maps. 3 points. Mr. C. P. PATTERSON

11 a. m.—12:15 p. m., Tuesday and Friday, Room 605 Journalism. Fee \$18

This course is planned for students who have not completed the collegiate entrance requirement.

**History eX4—Ancient history.** Texts, discussions, readings, notes and maps. 3 points. Mr. CALDWELL

4:30—5:45 p. m., Tuesday and Friday, Room 703 Hamilton. Fee \$18

This course is planned for students who have not completed the collegiate entrance requirement.

**History eA2—Modern and contemporary history.** Part II. Lectures, readings and discussions. Credit I, IV. 3 points. Fee \$18

Section I—4:30—5:45 p. m., Monday and Thursday, Room 703 Hamilton. Mr. CALDWELL

Section 2—8:20—9:35 p. m., Tuesday and Friday, Room 702 Hamilton. Dr. W. T. MORGAN

May not be taken before completing History eA1 or eA4.

Open with the consent of the instructors.

**History eA4—The foundations of modern Europe.** Lectures readings, and discussions. Credit I, IV. 3 points. Professor KENDRICK

4:30—5:45 p. m., Monday and Thursday, Room 702 Hamilton. Fee \$18

Course eA1 repeated in the Spring Session.

**History eA10—The development of American nationality.** Lectures, readings and discussions. Credit I, IV. 3 points. Dr. Fox

7—8:15 p. m., Monday and Thursday, Room 717 Hamilton. Fee \$18

**History e20—Imperialism in world politics in the nineteenth and twentieth centuries.** Credit I, IV. 2 points. Professor CARMAN

2:45—4:25 p. m., Thursday, Room 512 Journalism. Fee \$12

A study of the recent growth of imperialism, especially its connection with the world war, with the general aim of bringing the happenings of the present day into correlation with such fundamental features of nineteenth century history as nationalism, democracy, socialism, militarism and Imperialism.

**History 122—The history of the intellectual class in Europe: Part II.** Credit II. 3 points. Professor J. H. ROBINSON

2:10—3 p. m., Tuesday and Thursday, Room 309 Havemeyer. Fee \$18

**History e126—History of Russia in connection with Serbia, Bulgaria, Poland, and Bohemia.** Credit II. 3 points. Professor PRINCE

4—4:50 p. m., lecture; 4:50—5:40 p. m., conference, Wednesday, Room 713 Philosophy. Fee \$18

**History e154—Special problems of various modern nationalities.** Credit II. 3 points. Dr. W. T. MORGAN

4:10—5:50 p. m., Tuesday, Room 610 Philosophy. Fee \$18

Deals with problems of democracy, imperialism and militarism as they affect Germany, France, Italy, Russia and Great Britain, and treats of international relations since 1871.

**History e158—The history of England.** Lectures, readings and discussions. Credit II. 3 points. Professor SCHUYLER  
9:10–10:50 a. m., Saturday, Room 615 Kent. Fee \$18

**History e166—The recent history of the United States.** Lectures, readings and discussions. Credit II. 3 points. Professor MUZZEY

11 a. m.–12:40 p. m., Saturday, Room 615 Kent. Fee \$18

Deals with the history of the United States during the last quarter of a century. Emphasizes first of all the problems raised in our political and economic life by our entrance into world-politics. The theories of 'new nationalism' and 'new democracy' will be discussed in their bearing on our inherited institutions and in their implications for our future development.

**History e178—Latin America: industry; transportation; commerce.** Credit II, IX. 3 points. Professor SHEPHERD

7:30–9:10 p. m., Monday, Room 615 Kent. Fee \$18

Open only with the consent of the instructor except for students who have taken History e177.

**For courses in the history of the Eastern question see Slavonic e104, p. 41; Post-Biblical Jewish history, see Semitics e124, p. 41.**

### INTERIOR DECORATION

*See Decorative Design, pp. 17, 18*

### INTERNATIONAL LAW

*See Also Government, p. 27*

**International law e2—Latin-American diplomacy.** 2 points. Sr. GODOY  
7:40–9:20 p. m., Wednesday, Room 411 Kent. Fee \$12  
Fifteen lectures

A general outline of its origin, history, and present status of, and in, the Latin-American Republics.

For further details see special circular

**International law e4—The consular service in Latin America.** 2 points. Sr. GODOY

7:40–9:20 p. m., Thursday, Room 614 Kent. Fee \$12

Fifteen lectures

A general outline of the duties and powers of Consular officials in the Latin-American Republics and information regarding those countries useful to such officials.

For further details see special circular

**International law e104—Principles and practice of international law.** Lecture-study course. Credit II, IV. 3 points. Mr. MUNRO

4:30–6:10 p. m., Thursday, Room 614 Kent. Fee \$18

**International law e120—Modern European and American diplomacy.** Credit II, IV. 3 points. Mr. MUNRO

7:40–9:20 p. m., Wednesday, Room 614 Kent. Fee \$18

**International law e122—History of American diplomacy.** Credit II. 3 points. Mr. MUNRO

11–11:50 a. m., Monday and Tuesday, Room 614 Kent. Fee \$18

Special attention given to history and methods of diplomacy of United States: (1) Diplomacy of Revolution; (2) period from Treaty of Peace of 1783 to termination of War of 1812; (3) from the termination of that War to Civil War; (4) from outbreak of that War to present time.

*International Relations*

**International relations e102—History and growth of international relations.** Lecture-study course. Credit II. 3 points. Mr. MUNRO  
7:40-9:20 p. m., Tuesday, Room 614 Kent. Fee \$18

## LATIN

**\*Latin eX2—Elementary Latin and Cæsar.** Credit I in Columbia College; IV. 3 points. Professor GUERNSEY  
4:30-6 p. m., Tuesday and Friday, Room 518 Hamilton. Fee \$18

**Latin eX8—Elementary course.** Credit I in Columbia College if offered in conjunction with Latin eX2 or eX3; IV. 3 points. Miss McCLEES  
4:30-5:45 p. m., Monday and Thursday, Room 410 East. Fee \$18  
A course for beginners.

**Latin eY4—Cicero and Sallust.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY5 or eY6. 3 points. Professor GUERNSEY  
4:30-6 p. m., Monday and Thursday, Room 518 Hamilton. Fee \$18  
Open with the consent of the instructor.

**Latin eY6—Latin prose composition.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY3 or eY4. 2 points. Miss WYE  
2:10-3 p. m., Tuesday and Thursday, Room 610 Journalism. Fee \$12  
Latin eY5 repeated in the Spring Session.

**Latin eY8—Ovid and Vergil.** Credit I in Columbia College;<sup>1</sup> IV. 3 points. Professor MOORE  
4:30-6 p. m., Tuesday and Friday, Room 511 Hamilton. Fee \$18  
An introduction to Latin poetry and hexameter verse.  
Latin eY1 repeated in the Spring Session.  
Open with the consent of the instructor.

**Extension students who are qualified will also be admitted to the following course:**

**Latin 202—Latin literature of the Republic.** 3 points. Professor N. G. McCREA  
10 a. m.-12 m., Saturday, Room 706 Philosophy. Fee \$18

## LAW

**Law eX2—Nature and functions of law.** Credit I, IV. 2 points. Mrs. MABEL WITTE MERRITT  
4:30-6:10 p. m., Monday, Room 614 Kent. Fee \$12

## LIBRARY ECONOMY

**Library economy e2—Bibliography.** 2 points. Miss H. R. KELLER  
10-10:50 a. m., Friday, Room 610 Journalism. Fee \$12

<sup>1</sup> To secure this credit all three courses, Latin eY1 or eY8, eY3 or eY4, and eY5 or eY6, or their equivalents in the Summer Session, must be offered.



**Library economy e4—Cataloguing and classification.** 2 points. Miss H. R. KELLER

9:15 a. m.—12:15 p. m., Tuesday and Thursday, Room 401 Library. Fee \$12  
Open with the consent of the Instructor.

**Library economy e6—Library administration.** Seminar. 2 points. Miss H. R. KELLER

10—10:50 a. m., Wednesday, Room 610 Journalism. Fee \$12

**Library economy e8—Children's literature and story-telling.** 1 point. Mrs. GOULD

10—10:50 a. m., Saturday, Room 707 Journalism. Fee \$6

**Library economy e22—Indexing, filing and cataloguing as applied in business.** 2 points. Fee \$12. Miss H. R. KELLER

Section 1—7:45—9:45 p. m., Wednesday, Room 401 Library

Section 2—9—11 a. m., Saturday, Room 401 Library

Time for practice work in filing will be arranged.

## MATHEMATICS

**Mathematics eX2—Algebra, elementary and intermediate course** (complete). 4 points. Mr. POST

7:25—8:15 p. m., Monday, Tuesday, Thursday and Friday, Room 214 Hamilton. Fee \$24

Course eX1 repeated in the Spring Session.

**Mathematics eX4—Algebra, elementary course.** 3 points. Mr. BIRD

8:20—9:35 p. m., Monday and Thursday, Room 203 Hamilton. Fee \$18

Mathematics eX3 repeated in the Spring Session.

**Mathematics eX6—Algebra, intermediate course.** 3 points. Mr. SWENSON

7—8:15 p. m., Monday and Thursday, Room 203 Hamilton. Fee \$18

Mathematics eX5 repeated in the Spring Session.

**Mathematics eY2—Plane geometry.** 4 points. Mr. POST

6:10—7 p. m., Monday, Tuesday, Thursday and Friday, Room 214 Hamilton. Fee \$24

Mathematics eY1 repeated in the Spring Session.

**Mathematics eA2—Solid geometry.** Credit I, IV. 3 points. Mr. SWENSON

7—8:15 p. m., Tuesday and Friday, Room 203 Hamilton. Fee \$18

Mathematics eA3 repeated in the Spring Session.

**Mathematics eA4—Trigonometry.** Credit I, IV. 2 points. Mr. MALLORY

8:20—9:10 p. m., Monday and Thursday, Room 214 Hamilton. Fee \$12

Mathematics eA1 repeated in the Spring Session.

**Mathematics e2—Algebra.** Credit I, IV. 3 points. Dr. FISCHER

7—8:15 p. m., Monday and Thursday, Room 202 Hamilton. Fee \$18

Mathematics e1 repeated in the Spring Session.

**Mathematics e4—Analytical geometry.** Credit I, IV. 3 points. Mr. BIRD  
7-8:15 p. m., Monday and Thursday, Room 406 Hamilton. Fee \$18

Mathematics e3 repeated in the Spring Session.

**\*Mathematics e56—Calculus.** Credit I, IV. 3 points. Dr. MULLINS  
7-8:15 p. m., Tuesday and Friday, Room 202 Hamilton. Fee \$18

**Mathematics e58—Calculus.** Credit I, IV. 3 points. Mr. MALLORY  
8:20-9:35 p. m., Tuesday and Friday, Room 202 Hamilton. Fee \$18

Mathematics e75 repeated in the Spring Session.

Will not be given for less than ten students.

## MUSIC

**Music eX2—University Chorus.** Professor WALTER HENRY HALL  
8:15-9:45 p. m., Monday. Room 206 Journalism. Fee for University students  
expecting credit, \$6 for the year, otherwise no charge excepting for music used.  
Credit I. 1 point for the year with special arrangement, if taken in conjunction  
with another course in music.

**Music e6—Elementary ear training and dictation.** Credit IV. 2 points.  
Mr. MANNING

11-12:40 a. m., Saturday, Room 604 Journalism. Fee \$12

Identical with music e5 but given in the Spring Session.

**Music e6a—Advanced ear training and dictation.** Credit IV. 2 points.  
Mr. MANNING

9-10:40 a. m., Saturday, Room 604 Journalism. Fee \$12

**Music e8—Elementary harmony.** Credit I, IV. 2 points. Mr. WARD  
4:10-5:50 p. m., Monday, Room 701 Journalism. Fee \$12

Open with the consent of the instructor.

**Music e8a—Elementary harmony.** Credit I, IV. 2 points. Mr. WARD  
1:10-2:50 p. m., Saturday, Room 701 Journalism. Fee \$12

**Music e10—Advanced harmony and elementary form.** Credit I, IV.  
2 points. Mr. WARD

4:10-5:50 p. m., Saturday, Room 701 Journalism. Fee \$12

Open with the consent of the instructor.

**Music e54—Introductory harmony.** Credit I, IV. 2 points. Mr. KRAFT  
11 a. m.-12:40 p. m., Saturday, Room 701 Journalism. Fee \$12

**Music e56—Sight singing.** Credit IV. 2 points. Mr. KRAFT  
9-10:40 a. m., Saturday, Room 701 Journalism. Fee \$12

## MUSICO-THERAPY

**Musico-therapy e2—Musico-therapy and re-education.** 2 points. Miss  
ANDERTON

4:30-6:00 p. m., Monday, Room 206 Journalism. Fee \$12

This course is designed primarily for musicians interested in the rehabilitation of wounded  
soldiers.

For full description, see special circular.

## NATIONAL SERVICE

**National service eX20—Training course for girl's recreational work.** Conducted in cooperation with the National League for Women Workers. Fee \$25. Miss JEAN HAMILTON

This class will open May 12 and close June 14.

For full description, see special circular.

## NEUROLOGY

**Neurology e224—Neuro-anatomy.** The anatomy, histology, development and architectonics of the nervous system of man. Followed by a comparative study of the nervous system of the vertebrates. Lectures, demonstrations, conferences, and laboratory work. Credit II, VI. 3 points. Professor TILNEY, Messrs. ELWYN and DEFREM

7:10 p. m., Friday. Neurologic Laboratory, College of Physicians and Surgeons, 437 West 59th Street. Fee \$18

Open with the consent of the Instructor.

## OPTICS AND OPTOMETRY

The University offers a two years' course in optics and optometry for students of optometry. A special circular describing these classes will be sent on application to the Secretary of the University.

## ORAL HYGIENE (Dental Hygiene)

The University offers a one-year's course in Oral Hygiene (Dental Hygiene) to women students who desire to be trained to be dental hygienists. A special circular describing these courses will be sent on application to the Secretary of the University.

## PHILOSOPHY

**Philosophy eA2—Principles of science: concepts and problems of philosophy.** Lectures, recitations, and individual consultations with the instructor. Credit I, IV. 3 points. Mr. GARNIER

8:20-9:35 p. m., Tuesday and Friday, Room 503 Hamilton. Fee \$18

**Philosophy eA4—Principles of science: methods, deductive and inductive logic.** Credit I, IV. 3 points. Dr. SCHNEIDER

4:30-5:45 p. m., Tuesday and Friday, Room 503 Hamilton. Fee \$18

Course eA1 repeated in the Spring Session for students entering at that time.

**Philosophy e22—Ethical ideals, past and present.** Credit I, IV. 2 points. Professor PARKER

4:30-6:10 p. m., Wednesday, Room 403 Avery. Fee \$12

An historical and critical survey of the ends of life which men have actually put before them as revealed in the literatures, religions, and civilizations of the world.

**Philosophy e136—Radical, conservative, and reactionary tendencies in present-day morals.** Credit II. 3 points. Professor MONTAGUE

7:40-9:30 p. m., Friday, Room 502 Hamilton. Fee \$18



**Philosophy e142—General esthetics.** Credit I, II. 2 points. Winter Session. Dr. PARKHURST

7:40–9:30 p. m., Tuesday, Room 511 Hamilton. Fee \$12

The course will aim to define beauty as manifested in certain of the arts and to describe the characteristic experience of the beautiful and of other esthetic values such as the tragic, the sublime, etc. Possible classifications of the arts will be suggested and canons of taste established. Some of the connections will be traced between art proper and such things as magic, mysticism, and ritual, thereby calling attention to the esthetic element in the more important varieties of emotional experience. Some of the traditional problems of esthetic theory will be considered—notably that of the antithesis between imitation of nature and expression of the ideal. Finally, the formal aspect of art will be analyzed, with special emphasis upon the principles of repetition, rhythm, and symmetry as operative, for example, in the structure of poetry, architecture, sculpture, and painting.

**Philosophy e162—History of philosophy.** Credit I, IV. 2 points. Credit II. 3 points. Professor PARKER

4:30–6:10 p. m., Friday, Room 403 Avery. Fee \$12 or \$18

**Extension students who are qualified will also be admitted to the following course:**

**Philosophy 22—Ethics.** 3 points. Fee \$18. Professor LORD

Columbia College. 11 a. m., Monday, Wednesday and Friday, Room 511 Hamilton.

Barnard College. 1:10 p. m., Monday, Wednesday and Friday, Barnard College.

## PHONETICS

**Phonetics e4—Speech improvement.** Credit IV. 2 points. Miss CREASEY  
9–10:40 a. m., Saturday, Room 507 Journalism. Fee \$12

This course is intended primarily for teachers wishing to specialize in speech improvement, but it will be of great value also to teachers in general inasmuch as a knowledge of voice production and phonetics will enable them to teach correct speech, especially in the lower grades.

**Phonetics e102—Phonetics and pronunciation.** 3 points. Mr. TILLY  
4:30–6:10 p. m., Friday, Room 512 Journalism. Fee \$18

**Phonetics e104—Intermediate course.** 3 points. Mr. TILLY  
4:30–6:10 p. m., Monday, Room 512 Journalism. Fee \$18

English pronunciation will continue to be the chief subject. Course only open to students who have had Phonetics e101–102 or equivalent instruction in this subject.

**Phonetics e106—Advanced course.** 3 points. Mr. TILLY  
4:30–6:10 p. m., Tuesday, Room 512 Journalism. Fee \$18

**Phonetics e108—Comparative phonetics. Intermediate course.** 3 points. Mr. TILLY

4:30–6:10 p. m., Wednesday, Room 512 Journalism. Fee \$18

**Phonetics e110—Comparative phonetics. Advanced course.** 3 points. Mr. TILLY

4:30–6:10 p. m., Thursday, Room 512 Journalism. Fee \$18

**Phonetics e112—Special course dealing with one foreign language.** 3 points. Mr. TILLY

9–10:40 a. m., Saturday, Room 603 Journalism. Fee \$18

Reading and explanation of French phonetic texts, colloquial and literary, with phonetic dictation.

**Phonetics e114—Special course dealing with one foreign language.** 3 points. Mr. TILLY

11 a. m.—12:40 p. m., Saturday, Room 610 Journalism. Fee \$18

Reading and explanation of Spanish (or Italian) phonetic texts, colloquial and literary, with phonetic dictation.

### PHOTOPLAY COMPOSITION

**Photoplay composition e2—Elementary course.** 3 points. Fee \$18. Mrs. FRANCES T. PATTERSON

Section 1—3:10–4:25 p. m., Tuesday, Room 509 Hamilton

Section 2—7:10–8:25 p. m., Wednesday, Room 509 Hamilton

Identical with Photoplay composition e1, but offered in the Spring Session.

**Photoplay composition e4—Intermediate course.** 3 points. Fee \$18. Mrs. FRANCES T. PATTERSON

Section 1—3:10–4:25 p. m., Thursday, Room 509 Hamilton

Section 2—8:30–9:45 p. m., Wednesday, Room 509 Hamilton

Identical with Photoplay composition e3, but offered in the Spring Session.

**Photoplay composition e6—Advanced course.** 4 points. Mrs. FRANCES T. PATTERSON

8:00–9:15 p. m., Monday, Room 509 Hamilton. Fee \$24

### PHYSICAL EDUCATION

*(For men students only)*

**Physical education eA2—Gymnastics and games.** Credit I, IV. 2 points. Professor ELLIOTT

8:30–9:20 p. m., Monday, Wednesday and Thursday, University Gymnasium. Fee \$12

**Physical education eW2—Wrestling and self-defense.** 2 points. Fee \$12. Mr. PETERSON

Section 1—7:30–8:30 p. m., Thursday, University Gymnasium

Section 2—8:30–9:30 p. m., Thursday, University Gymnasium

**Physical education eY2—Swimming.** 2 points. Fee \$12. Mr. PETERSON

Section 1—Monday, 8:30–9 or 9–9:30 p. m., University Gymnasium

Section 2—Thursday, 8:30–9 or 9–9:30 p. m., University Gymnasium

Section 3—Saturday, 8:30–9 or 9–9:30 p. m., University Gymnasium

Students may receive instruction on either Monday, Wednesday, or Thursday, and will have the privilege of using the swimming pool on the remaining evenings.

**Physical education eZ2—Boxing.** 2 points. Fee \$12. Mr. WEEMAN

Section 1—Thursday, 7:30–8:30 p. m., University Gymnasium

Section 2—Thursday, 8:30–9:30 p. m., University Gymnasium

Students have the privilege of using the gymnasium and swimming pool Monday, Thursday, and Saturday evenings from 7 to 10 o'clock.

## PHYSICS

**Physics eA2—Elementary course in general physics.** 3 hours' lectures and recitations, with 2 hours' laboratory work a week. Credit I, IV. 4 points. Dr. MORSE and Mr. STEMPEL

7:30-9 p. m., Monday and Thursday, lectures, Room 304 Fayerweather. Fee \$24

This course may be taken only after consultation with the instructor.

## POLISH

*See Slavonic, pp. 41, 42*

## POLITICS

*See Government, p. 27*

## PSYCHOLOGY

**Psychology e2—Elements of psychology.** Lectures, demonstrations, discussions and recitations. Credit I, IV. 3 points. Fee \$18. Dr. ACHILLES  
Section 1—4:30-5:45 p. m., Tuesday and Friday, Room 516 Schermerhorn  
Section 2—7-8:15 p. m., Tuesday and Friday, Room 407 Schermerhorn

**Psychology e6—Psychology for nurses and social workers.** Lectures and discussions. Credit IV. 2 points. Dr. MURDOCK  
8-9:40 p. m., Tuesday, Room 407a Schermerhorn. Fee \$12

**Psychology e132—Mental hygiene.** Credit II. 3 points. Dr. LAMBERT  
5-6:40 p. m., Monday, Room 407a Schermerhorn. Fee \$18  
e131 repeated in the Spring Session.

**Psychology e146—Applications of psychology.** Lectures, demonstrations and discussions. Credit II. 3 points. Miss CAROTHERS  
4:10-5:50 p. m., Wednesday, Room 407 Schermerhorn. Fee \$18

**Psychology e168—Psychology in War and reconstruction.** Credit II. 3 points. Professor WOODWORTH  
7-8:40 p. m., Friday, Room 407a Schermerhorn. Fee \$18  
Applications of psychology in testing for military fitness and in re-education of the disabled.

**Business e118—Psychology of advertising and selling.** Credit II, IX. 3 points. Miss STICKLAND  
7:40-9:20 p. m., Monday, Room 407 Schermerhorn. Fee \$18

**Extension students who are qualified will also be admitted to the following course:**

**Psychology 112—Survey of modern psychology.** 3 points. Professor WOODWORTH  
10 a. m., Monday, Wednesday, and Friday, Room 407 Schermerhorn. Fee \$18

## PUBLIC HEALTH

*See Sociology e110, p. 42*



## ROMANCE LANGUAGES

*French*

**\*French eA2—Elementary course.** Credit I, IV. 4 points. Fee \$24

Section 1—4:30-5:55 p. m., Tuesday, Wednesday and Friday, Room 311 Havemeyer. Dr. ALEXANDER

Section 2—8:30-9:55 p. m., Monday, Wednesday and Thursday, Room 303 Hamilton. Mr. FERARU

Section 3—3-4:25 p. m., Tuesday, Wednesday and Friday, Room 311 Havemeyer. Dr. LEDUC

*College sections 4 and 5 limited to men matriculated in Columbia College.*

Section 4—11-11:50 a. m., Monday, Tuesday, Wednesday, Thursday and Friday, Room 408 Hamilton. Dr. PERRIER

Section 5—1:10-2 p. m., Monday, Tuesday, Wednesday, Thursday and Friday, Room 309 Hamilton. Mr. WILKINSON

**French eA4—Elementary course.** Credit I, IV. 2 points. Dr. SWANN

9-10:40 a. m., Saturday, Room 512 Journalism. Fee \$12

Open with the consent of the Instructor.

**French eA6—Elementary course.** Credit I, IV. 2 points. Dr. SWANN

11 a. m.-12:40 p. m., Saturday, Room 512 Journalism. Fee \$12

Open with the consent of the Instructor.

**French eA8—Elementary course.** Credit I, IV. 4 points. Fee \$24

Section 1—4:30-5:55 p. m., Tuesday, Wednesday and Friday, Room 303 Hamilton. Dr. MANTZ

Section 2—4:30-5:55 p. m., Monday, Wednesday and Thursday, Room 307 Hamilton. Mr. DE LA ROCHELLE

Section 3—7-8:15 p. m., Tuesday; 7-8:45 p. m., Wednesday; and 7-8:15 p. m., Friday, Room 406 Hamilton. Dr. SWANN

Equivalent to French eA1, given in the Spring Session for students who enter at that time.

**\*French eA12—Shorter elementary course.** Credit I, IV. 3 points. Fee \$18

Section 1—4:30-5:45 p. m., Tuesday and Friday, Room 609 Journalism. Professor SPIERS

Section 2—7-8:15 p. m., Monday and Thursday, Room 303 Hamilton. Mr. FERARU

Section 3—4:30-5:45 p. m., Monday and Thursday, Room 311 Havemeyer. Dr. ALEXANDER

**\*French eB2—Intermediate course—grammar, reading and composition.** Credit I, IV. 4 points. Fee \$24

Section 1—4:30-5:55 p. m., Monday, Wednesday and Thursday, Room 605 Journalism. Mr. OLINGER

Section 2—2:30-3:55 p. m., Monday, Wednesday and Thursday, Room 712 Journalism. Mr. FERARU

Section 3—7-8:15 p. m., Tuesday; 7-8:45 p. m., Wednesday; and 7-8:15 p. m., Friday. Room 303 Hamilton, Tuesday and Friday, and Room 307 Hamilton, Wednesday. Miss PRENEZ

**French eB4—Intermediate course—grammar, reading and composition.** Credit I, IV. 2 points. Dr. MANTZ

11 a. m.—12:40 p. m., Saturday, Room 614 Kent. Fee \$12

Equivalent to one-half of French eB1.

**French eB8—Intermediate course—grammar, reading and composition.** Credit I, IV. 4 points. Fee \$24

Section 1—4:30–5:55 p. m., Tuesday, Wednesday and Friday, Room 309 Hamilton. Dr. T. CLARK

Section 2—7–8:15 p. m., Tuesday; 7–8:45 p. m., Wednesday; and 7–8:15 p. m., Friday, Room 408 Hamilton. Mr. DE LA ROCHELLE

Equivalent to French eB1, given in the Spring Session. This course should be followed by French eB9 in the succeeding session.

**French e4—Practical course and introduction to French literature.** Composition, readings and conversation. Credit I, IV. 3 points. Professor FORTIER

4:30–5:45 p. m., Tuesday and Friday, Room 507 Hamilton. Fee \$18

Open with the consent of the Instructor.

**French e10—Advanced composition and practice in speaking French.** Credit I, IV. 3 points. Fee \$18

Section 1—4:30–5:45 p. m., Monday and Thursday, Room 402 Hamilton. Professor FORTIER

Section 2—3:10–4:25 p. m., Tuesday and Friday, Room 403 Avery. Mr. OLINGER

Open with the consent of the instructors.

**French e16—Contemporary French writers 1885–1918.** Credit I. 2 points. Professor SPIERS

4:30–6:10 p. m., Monday, Room 303 Hamilton. Fee \$12

Open with the consent of the instructor.

**French e18—History of the French drama.** Credit I, IV. 3 points. Professor LOISEAUX

4:30–5:45 p. m., Tuesday and Friday, Room 307 Hamilton. Fee \$18

**French e120—French literature in the nineteenth century.** Credit II. 3 points. Dr. MANTZ

4:30–5:45 p. m., Monday and Thursday, Room 309 Hamilton. Fee \$18

**Extension students who are qualified will also be admitted to the following courses:**

**French 102—Romance philology.** 3 points. Professor TODD

4:10 p. m., Tuesday and Thursday, Room 508 Philosophy. Fee \$18

**French 106—General survey of French literature.** 3 points. Professor FORTIER

1:10 p. m., Monday, Wednesday and Friday, Room 302 Philosophy. Fee \$18

**French 108—Old French literature to the fifteenth century.** 3 points. Professor WEEKS

5:10 p. m., Monday, Wednesday and Friday, Room 508 Philosophy. Fee \$18

**French 110—French literature of the fifteenth and sixteenth centuries.** 3 points. Professor GERIG  
3:10 p. m., Tuesday and Thursday, and 10 a. m., Saturday, Room 508 Philosophy. Fee \$18

**French 112—Classic period.** 3 points. Professor SPIERS  
11 a. m., Monday, Wednesday and Friday, Room 302 Philosophy. Fee \$18

**French 114—French literature of the eighteenth century.** 3 points. Professor LOISEAUX

3:10 p. m., Monday, Wednesday and Friday, Room 508 Philosophy. Fee \$18

**French 122—De L'Optimisme humanitaire au Positivisme.** 2 points. Professor BALDENSPERGER

4:10 p. m., Thursday, Room 307 Philosophy. Fee \$12

### *Italian*

**\*Italian e2—Elementary course.** Credit I, IV. 3 points. Mr. BIGONGIARI  
7-8:15 p. m., Monday and Thursday, Room 518 Hamilton. Fee \$18

**Italian e4—Advanced course.** Credit I, IV. 3 points. Mr. BIGONGIARI  
6-7 p. m., Monday and Thursday, Room 518 Hamilton. Fee \$18

Open with the consent of the instructor.

### *Spanish*

**\*Spanish e2—Elementary course.** Credit I, IV. 3 points. Fee \$18

Section 1—3:10-4:25 p. m., Monday and Thursday, Room 301 Mines. Mr. IMBERT

Section 2—3:10-4:25 p. m., Monday and Thursday, Room 302 Engineering. Mr. AGRAMONTE

Section 3—3:10-4:25 p. m., Tuesday and Friday, Room 301 Mines. Mr. AGRAMONTE

Section 4—4:30-5:45 p. m., Tuesday and Friday, Room 302 Engineering. Mr. HARRISON

Section 6—7-8:15 p. m., Tuesday and Friday, Room 309 Hamilton. Dr. T. CLARK

Section 7—7:30-8:45 p. m., Monday and Thursday, Room 307 Hamilton. Mr. WILKINS

Section 8—6:10-7:25 p. m., Tuesday and Friday, Room 307 Hamilton. Mr. TORRES

Section 10—2:30-3:55 p. m., Tuesday and Friday, Room 302 Engineering. Dr. VAETH

**Spanish e4—Advanced course.** Credit I, IV. 3 points. Fee \$18

Section 1—4:30-5:45 p. m., Monday and Thursday, Room 408 Avery. Professor GERIG

Section 2—7-8:15 p. m., Monday and Thursday, Room 309 Hamilton. Mr. MERCADO

Section 3—8:45-10 p. m., Monday and Thursday, Room 307 Hamilton. Mr. WILKINS

Open with the consent of the instructors.



**Spanish e6—Practical course and introduction to Spanish literature.**

Credit I, IV. 3 points. Mr. IMBERT

4:30-5:45 p. m., Tuesday and Friday, Room 614 Kent. Fee \$18

Open with the consent of the instructor.

**Spanish e8—Elementary course.** Credit I, IV. 3 points. Fee \$18

Section 1—4:30-5:45 p. m., Monday and Thursday, Room 301 Mines. Dr. T. CLARK

Section 2—6:10-7:25 p. m., Monday and Thursday, Room 307 Hamilton  
Mr. WILKINS

A course for students who have no knowledge of Spanish. Equivalent to Spanish et.

**Spanish e12—Elementary course.** Credit I, IV. 2 points. Mr. WILKINS

3:10-4:50 p. m., Saturday, Room 403 Avery. Fee \$12

A course for students having no knowledge of the language.

**Spanish e14—Intermediate course.** Credit I, IV. 2 points. Mr. WILKINS

1:30-3:10 p. m., Saturday, Room 403 Avery. Fee \$12

**Spanish e16.** Conversational practice, composition, and commercial correspondence. Credit I, IV. 3 points. Mr. AGRAMONTE. Fee \$18

Section 1—4:30-5:45 p. m., Monday and Thursday, Room 507 Journalism

Section 2—4:30-5:45 p. m., Tuesday and Friday, Room 601 Hamilton

Section 3—4-6 p. m., Saturday, Room 603 Journalism

The object of these courses is to give the student practice in spoken and written Spanish with special reference to its application to commercial practice, including composition, reading, dictation, and letter writing. Special attention will be given to the explanation of legal, commercial, and technical terms most common in daily use.

**Extension students who are qualified will also be admitted to the following course:****Spanish 102—Historia de la Novela Española.** 3 points. Professor DE ONÍS

5:10 p. m., Monday and Friday, Room 302 Philosophy. Fee \$18

**The attention of students in Romance languages is called to the evening classes in Spoken Language described in a separate bulletin.****RUSSIAN***See Slavonic, pp. 41, 42***SECRETARIAL CORRESPONDENCE****Secretarial correspondence e2—Letter writing.** Part II. 3 points. Fee \$18Section 1—4:30-5:45 p. m., Monday and Thursday, Room 302 Engineering.  
Miss HULL

Section 2—7-8:15 p. m., Tuesday and Friday, Room 509 Hamilton. Dr. SCARBOROUGH

Open with the consent of the instructors.

**SECRETARIAL STUDIES**

The University offers through its School of Business and the Department of Extension Teaching classes in secretarial studies. In Extension Teaching these courses normally require two years.

A special circular will be sent on application to the Secretary of Columbia University.

### SEMITIC

**Semitic e124—Post-Biblical Jewish history.** Credit II. 2 points. Dr. RADIN

4-6 p. m., Thursday, Room 307 Havemeyer. Fee \$12

**For a course in the study of the English Bible see Hebrew Literature e126, p. 27.**

### SHIP DRAFTING

**Drafting e2X—Mechanical drafting for ship draftsmen.** Six hours' lecture and drafting room work per week. Professor HARRINGTON

7:20-10 p. m., Tuesday and Friday, Room 406 Engineering. Fee \$12

This course will be repeated July 7.

**Ship drafting e2—First course, for assistant ship draftsmen.** 6 hours' lecture and drafting room work per week. Mr. BOLTON

7:20-10 p. m., Tuesday and Thursday, Room 602 Avery. Fee \$18

This course will be repeated July 7.

For other courses in Ship Drafting, consult Curator RICHARD F. BACH, Room 405 Avery, also see special circular.

### SLAVONIC

**Russian e102—The elements of the Russian language with instruction in reading, writing and speaking.** Credit II. 3 points. Professor PRINCE

4-5:40 p. m., Friday, Room 406 Philosophy. Fee \$18

The object of this course is to enable students, who have arrived too late to begin Russian in the regular University course, to commence their study of the language during the Spring Session.

**Slavonic e104—The history of the Eastern question.** Lectures and conferences. Credit II. 3 points. Mr. KALENDERIAN

7:30-9:10 p. m., Tuesday, Room 307 Hamilton. Fee \$18

**Slavonic e112—Folk life and customs of the near Eastern peoples.** Credit II. 3 points. Fee \$18. Mr. KALENDERIAN

Section 1—7:30-9:10 p. m., Thursday, Room 213 Hamilton

Section 2—11 a. m.-12:45 p. m., Saturday, Room 302 Philosophy

For full description, see special circular.

**Russian e108—Elementary commercial Russian.** Credit II. 3 points. Professor PRINCE and instructor

8:20-9:35 p. m., Tuesday and Friday, Room 607 Hamilton. Fee \$18

**Russian e110—Advanced commercial Russian.** Credit II. 3 points. Professor PRINCE and instructor

7-8:15 p. m., Tuesday and Friday, Room 607 Hamilton. Fee \$18

**History e126—History of Russia in connection with Serbia, Bulgaria, Poland, and Bohemia.** Credit II. 3 points. Professor PRINCE

Lecture, 4-4:50 p. m., Wednesday; conference, 4:50-5:40 p. m., Wednesday, Room 308 Philosophy. Fee \$18

**Polish e102—Elementary Polish.** Credit II. 3 points. Mr. STRASZEWICZ  
7:00–8:00 p. m., Tuesday and Thursday, Room 603 Hamilton. Fee \$18

This course will be supplemented by lectures on Polish literature.

**Polish e104—History of Poland with special reference to the present political situation.** Lectures on Polish history with discussion. Credit II. 3 points. Mr. STRASZEWICZ

8:00–9:00 p. m., Tuesday and Thursday, Room 603 Hamilton. Fee \$18

This course is open to those who have not studied the Polish language.

**Attention is also called to the courses in the Spoken Language (see special circular).**

## SOCIOLOGY

**Sociology e52—Practical sociology: social conditions in the United States.** Lectures, readings and laboratory. Credit I, IV. 2 points. Mr. BOWMAN

7:30–9:10 p. m., Monday, Room 614 Kent. Fee \$12

**Sociology e52a—Laboratory work in connection with Sociology e52.** Credit I, IV. 1 point. Mr. BOWMAN

4:10–5 p. m., Monday, Room 307 Engineering. Fee \$6

**Sociology e54—Community socialization.** Lectures, readings and laboratory. Credit I, IV. 2 points. Mr. BOWMAN

7:30–9:10 p. m., Wednesday, Room 401 Kent. Fee \$12

Principles of survey: review of community survey; the survey as stimulus to community action. Types of present-day communities. Experiments in socialization. Fields of neighborhood activities; social, political, economic, industrial and cultural. Comparison of various types of community organization and of various developments of community socialization. Influences of racial composition, local customs. Expressions of distinctly local aspirations. Utilization of neighborhood social forces. The community as a unit of the city, state and nation.

Will not be given for less than ten students.

**Sociology e54a—Laboratory work in connection with Sociology e54.** Credit I, IV. 1 point. Mr. BOWMAN

Laboratory hours to be arranged. Fee \$6

**Sociology e110—Public health and standard of living.** Credit II, IV. 2 points. Professor CHADDOCK

4–6 p. m., Friday, Room 502 Kent. Fee \$12

**Sociology e142—Social problems: social betterment.** Lectures, readings and discussions. Credit II, IV. 3 points. Mr. SHENTON

7:40–9:30 p. m., Wednesday, Room 615 Kent. Fee \$18

The development of movements for human betterment, including eugenics, euthenics, social legislation, socialized philanthropy and social education. Problems of normal and abnormal society. Constructive sociological criticisms of various methods of social reform.

**Sociology e144—Social institutions; institutions of constituent society.** Lectures, readings, discussions and exercises. Credit II, IV. 3 points. Mr. SHENTON

7:40–9:30 p. m., Thursday, Room 615 Kent. Fee \$18

Educational institutions will be studied in respect to their social beginnings, the crises in their development and their present functions in society. Social self-control will be further studied as



it operates through legal institutions (including status, contract and social legislation); industrial institutions (including property and labor); political institutions (including leadership and organization); and the general institutions of democratic society. Policies of *laissez-faire* as opposed to those of social control. Relations of individuals and social institutions to society.

**Statistics e148—Advanced: principles and methods of statistics.** Lectures, readings and laboratory exercises. Credit II. 3 points. Professor CHADDOCK

7:40–9:30 p. m., Wednesday, Room 502 Kent. Fee \$18

This course designed for those who have taken a half year in Sociology or Economics 209, or Economics 59, or Sociology e147. It is identical with Economics or Sociology 210, or Economics 60 and will complete a full year's credit in graduate or college statistics. Given if ten students register.

**Statistics e150—Elementary principles and methods of statistics.** Lectures, readings and laboratory exercises. Credit II. 3 points. Fee \$18

Section 1—7:40–9:00 p. m., Tuesday and Thursday, Room 502 Kent. Mr. JONES

The elementary principles of statistics and their application. A repetition of the first half-year's work. The study of how to gather, analyze and interpret statistical data. Schedules, tabulation, averages, variation, index numbers, ratios, graphic methods, will be treated and laboratory problems to illustrate principles will be required. Accuracy tests and practice with mechanical devices and laboratory equipment will be emphasized. It is recommended that a course in Indexing and Filing be taken with this course by those going into business and government work. This statistical training is designed for beginners and especially those wishing to prepare for business positions or the work of social organizations or for government service, under Civil Service requirements.

Section 2—5:10–6:00 p. m., Tuesday and Thursday, Room 502 Kent. Professor CHADDOCK

Additional laboratory hours to be arranged.

The material of this course and its purpose identical with e150, Section 1. In connection with this course also it is recommended that a course in Indexing and Filing be taken by those wishing to enter business positions or to prepare for Civil Service requirements.

**Sociology e152—Fundamental problems of democracy.** Lectures, readings and discussions. Credit II, IV. 3 points. Mr. SHENTON

7:40–9:30 p. m., Monday, Room 503 Kent. Fee \$18

This course will be devoted to the study of two of the most fundamental problems of democratic action. Collective decision and collective agreements, or how groups of people make decisions, and the responsibility resting upon them for such decisions, will be the first problem discussed. Social organization, or the way in which groups of people relate themselves to each other in order to carry out their common determination, will be the second problem discussed.

**Sociology e316—Seminar.** Discussions, research and thesis preparation. Credit II. 3 points. Mr. SHENTON

7:40–9:30 p. m., alternate Tuesdays, beginning February 11, Room 503 Kent. Fee \$18

Methods of sociological study and research. Sociological sources. Work supplementing the Extension Teaching courses in sociology, covering especially social assimilation, social institutions, collective decisions and social organization. Attention will be given to the preparation of the theses required of all candidates for the degree of A.M. in sociology.

**Extension students who are qualified will also be admitted to the following courses:**

**Sociology 256—What democracy is.** 3 points. Professor GIDDINGS

2:10 and 3:10 p. m., Friday, Room 515 Kent. Fee \$18

**Social economy 112—Social legislation.** 3 points. Professor LINDSAY  
5:10 p. m., Tuesday and Thursday, Room 515 Kent. Fee \$18

Recent development and applications of the principles of: (1) Labor legislation dealing with such topics as women and child wage-earners, industrial accidents; workmen's compensation; social insurance; unemployment; compulsory rest periods; industrial disputes and tactics and legal rights of organized employees' and employers' associations. (2) Humane legislation dealing with prevention of cruelty to children and animals, treatment of criminals, and mitigation of the evils of war.

## STENOGRAPHY AND TYPEWRITING

*Isaac Pitman System*

The courses described below are planned for high school and college graduates who wish to prepare themselves for stenographic or secretarial duties and for students who desire to become teachers of shorthand and typewriting. Classes for beginners are started at the opening of each Winter, Spring, and Summer Session.

In addition to a careful presentation of the principles of stenography and typewriting, instruction is given also in the following subjects: Secretarial and stenographic duties; editing; meeting office callers; telephoning; taking dictation; effective arrangement and display of typewriting; various arrangements, forms, and different parts of a letter; preparation of outgoing and incoming mail; commercial abbreviations; office reference books; remittance forms and other commercial papers; shipping and the papers involved; telegrams and cablegrams; practical information for typists; different parts of the typewriter and its care and repair; stencil cutting; operation of the mimeograph. The work is conducted as nearly like that of a business office as it is possible to do in the classroom. The touch method of typewriting as practised by rapid operators is taught.

Before receiving final credit for the second session in stenography and typewriting, students must complete a week of practice work in the office of the Director.

Students registered in all shorthand classes must pass an examination held regularly on the third Saturday afternoon of the Spring Session, in elementary English, including grammar, composition, spelling and punctuation, before receiving credit for the course.

In Room 509 Journalism Building there is an extensive shorthand library to which students have access.

The courses in stenography and typewriting are under the general supervision of Mr. WILLIAM E. HARNED, Room 509 Journalism. Office hours, 3:00-4:00 p. m., Tuesdays and Thursdays.

### *Morning Courses*

The morning courses are completed in one college year of thirty weeks. Students completing the courses are able to write shorthand at the rate of one hundred and twenty-five words a minute and to transcribe their notes on the typewriter at the rate of thirty words a minute. To obtain full credit, students registering for stenography are required to take the corresponding course in typewriting, as designated below.

**\*Stenography e2—Elementary and intermediate.** Part II. 6 points.  
Fee \$36

Section 1—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday and Friday; 10-11, Room 612 Journalism; 1-2, Room 610 Journalism. Mr. HARNED

Section 2—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday; 11 a. m.-12 m., Room 612 Journalism; 2-3 p. m., Room 713 Journalism. Miss DEARBORN

Section 3—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 612 Journalism. Mr. J. J. WRIGHT

Section 4—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 605 Journalism. Mr. BEIDLEMAN

**\*Typewriting e2—Elementary and intermediate.** Part II. 4 points. Fee \$24

Section 1—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 601 Journalism. Mr. HARNED

Section 2—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 601 Journalism. Miss DEARBORN

Section 3—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 602 Journalism. Mr. J. J. WRIGHT

Section 4—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 602 Journalism. Mr. BEIDLEMAN

**Stenography e4—Elementary.** Part I. 6 points. Fee \$36

Section 1—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 507 Journalism. Mr. BRYANT

Section 2—10-11 a. m. and 1-2 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday; 10-11 a. m., Room 712 Journalism; 1-2 p. m., Room 611 Journalism. Mr. MILLER

This course is planned for beginners and should be taken in conjunction with Typewriting e4.

**Typewriting e4—Elementary.** Part I. 4 points. Fee \$24

Section 1—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 601 Journalism. Mr. BRYANT

Section 2—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 602 Journalism. Mr. MILLER

This course is planned for beginners and should be taken in conjunction with Stenography e4.

**Stenography e10—Advanced.** 2 points. Miss DEARBORN

3:10-4 p. m., Tuesday, Wednesday, and Friday, Room 611 Journalism. Fee \$12

### *Afternoon and Evening Courses*

**Stenography e12—Elementary.** Part II. 3 points. Mr. MILLER

5:15-6:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 611 Journalism. Fee \$18

**Typewriting e12—Elementary.** Part II. 2 points. Mr. MILLER

4:15-5:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 602 Journalism. Fee \$12



**Stenography e14—Elementary.** Part I. 3 points. Mr. HARNED  
4:15-5:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room  
611 Journalism. Fee \$18

This course is planned for beginners and should be taken in conjunction with Typewriting e14.

**Typewriting e14—Elementary.** Part I. 2 points. Mr. HARNED  
5:15-6:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room  
602 Journalism. Fee \$12

This course is planned for beginners.

**Stenography e22—Elementary.** Part II. 2 points. Mr. BRYANT  
7:30-8:30 p. m., Monday, Wednesday, and Friday, Room 611 Journalism. Fee  
\$12

**Typewriting e22—Elementary.** Part II. 2 points. Mr. BRYANT  
8:30-9:30 p. m., Monday, Wednesday, and Friday, Room 602 Journalism. Fee  
\$12

**Stenography e24—Elementary.** Part I. 2 points. Mr. BEIDLEMAN  
8:30-9:30 p. m., Monday, Wednesday, and Friday, Room 611 Journalism.  
Fee \$12

This course is planned for beginners and should be taken in conjunction with Typewriting e24.

**Typewriting e24—Elementary.** Part I. 2 points. Mr. BEIDLEMAN  
7:30-8:30 p. m., Monday, Wednesday, and Friday, Room 601 Journalism.  
Fee \$12

This course is planned for beginners.

**Stenography e26—Intermediate.** 4 points. Mr. HUGHES  
7:30-9:30 p. m., Monday, Wednesday, and Friday, Room 609 Journalism. Fee  
\$24

## TYPOGRAPHY

**Typography e2—Proof-reading and the preparation of manuscript.**  
2 points. Mr. MCCARTHY  
4:30-6:10 p. m., Thursday, Room 609 Journalism. Fee \$12

## VOCATIONAL GUIDANCE

**Vocational guidance e2—Vocational guidance of girls.** 2 points. Miss  
ROBINSON

7-8:40 p. m., Friday, Room 603 Journalism. Fee \$12

The aim of this course is to induce a more scientific attitude toward advisory work and to give a sound basis for counseling.

The course will include a survey of the field of labor for the place occupied by women; a study of the development and achievements of vocational guidance in the United States as a basis for discussion of methods; a study of the different educational levels from which girls enter vocations and the value at each level of educational guidance; an analysis of the various elements of vocational guidance; the relation of the school curriculum, psychological tests, self-analysis, etc., to the choice of a vocation; an analysis of vocational fields open to girls; a discussion of methods practical for advisers.

This course will count for credit with the Board of Education of New York toward promotion and toward a principal's or assistant principal's certificate.

## ZOOLOGY

**Zoology e2a—Elementary biology and zoology.** Lectures and laboratory. Credit I, IV. 2 points. Professor MCGREGOR and Dr. MULLER

1:45-2:35 p. m., Saturday; laboratory, 2:40-4:30 p. m., Saturday, Room 619 Schermerhorn. Fee \$12

Open with the special consent of the instructor.

## PRACTICAL ARTS

**Officers of Administration for Extension Teaching  
in the School of Practical Arts**

JAMES EARL RUSSELL, LL.D. . . . . Dean of Teachers College  
MAURICE A. BIGELOW, PH.D. . . . . Director of School of Practical Arts  
CLIFFORD B. UPTON, A.M. . . . . Secretary of Teachers College  
BESSIE CARROLL . . . . Secretary to the Director of School of Practical Arts  
JESSICA BINGHAM REED . . . . Assistant to the Secretary of Teachers College

The School of Practical Arts of Teachers College, in cooperation with the University Department of Extension Teaching, offers certain courses of instruction to qualified students who have not matriculated in any part of Columbia University as candidates for degrees. Such non-matriculated students will be admitted only to Practical Arts classes which are designated e (extension) or esp (extension special). The permission of the departments concerned must be obtained before registering for extension courses marked with \* (*e.g.*, \*Cookery e2). Permission of departments is not required for admission to extension special courses.

Practical Arts extension courses which are announced as having Credit IV may be credited towards the Bachelor of Science degree if satisfactorily completed by non-matriculated students who afterward matriculate in the School of Practical Arts. The possible credit in points is stated in the description of courses.

Practical Arts extension special courses (marked esp; *e.g.*, Cookery esp 42) are intended for popular instruction and cannot be credited towards degrees or entrance requirements.

The extension courses in practical arts are not open to women under twenty-one years of age who do not reside with their parents or relatives.

An extension student may not register for more than 8 points per Session in any one department of the School of Practical Arts.

**Matriculated students of Teachers College or of other parts of the University who wish to register for part time programs should choose courses from the Announcement of the School of Practical Arts or from the special bulletin of Afternoon, Evening and Saturday Classes in Teachers College. The extension courses announced in this bulletin are not credited if taken by matriculated students unless they obtain in advance written approval from the Committee on Instruction.**

**Registration for Practical Arts Extension Courses.** Students register for Practical Arts extension courses at the office of the Registrar, University Hall, Columbia University. Information concerning such courses may be obtained at Table E in the office of the Secretary of Teachers College daily

9 a. m.-12 m., and 2-4 p. m., except Saturday afternoon; and also 7-8 p. m., on the evenings when courses begin.

In case of courses marked with \* a limited number of non-matriculated or extension students whose preparation is equal to that of regular students in these courses may be admitted if there are vacancies after 2 p. m. on February 5. The instructor must be consulted before registration, and written permission obtained.

Changes of programs, such as dropping or adding courses, can be made only at the Registrar's office in University Hall, where the complete records are kept on file. Permission to add courses marked with \* must be obtained from the instructor before changing programs at the Registrar's office.

*Number of students required* in classes is indicated in descriptions of certain courses. Such classes may be discontinued if the required number of students are not registered before the time for the second lesson.

*Limited classes.* Many classes for practical work are limited as to number of students. Such classes are indicated by the letter L affixed to the course number (e.g., \* **Cookery e2L**). Extension students must reserve places by personal application to the clerk in charge of extension classes, Desk E, Secretary's Office, Teachers College. Reservations must be made at the time of registration. Places will not be held for students who do not report to the instructor at the first lesson. In case of withdrawal from courses which have a required minimum registration, no fees will be returned.

Students who register in the Winter Session for courses which extend throughout the year must at the beginning of the Spring Session call at the Registrar's office at University Hall, renew their registrations, and pay the tuition fees of the Spring Session.

Admission of extension students to Practical Arts classes with Credit IV will not be permitted after Saturday, February 8, unless for reasons of weight special permission for registration without credit is granted by the Director of the School of Practical Arts.

The University fee of \$5 per year is charged to all extension students who register for Practical Arts courses marked e, but not to those who take only the popular lecture courses marked esp.

Unless special dates are mentioned in the following pages, all courses in Practical Arts are on the regular schedule of the School of Practical Arts, beginning Wednesday, February 5, 1919, for the Spring Session.

Special registration hours for extension students in Practical Arts for the Spring Session are Tuesday and Wednesday, February 4 and 5, 4 to 6 p. m., and Saturday, February 8, 9 to 12.

The attention of students is called to the fact that the numbers of courses and many details in the statement of the classes and hours are different in this section of the Announcement from those found on the preceding pages.

## PRACTICAL SCIENCE

Laboratory ticket: Students in all laboratory courses in the School of Practical Arts are required to purchase from the Bursar of Teachers College a laboratory breakage ticket, good for all science departments, price \$2. Unused coupons are redeemable at the end of any Session.



*Biology*

**\*Biology e4x—Biology for sex-education.** Credit IV. 1 point Spring Session, when taken supplementary to any course in hygiene or biology. Open only to women. Miss STACKPOLE

5:10–6 p. m., Monday. Room 421 T. C. Fee \$6

Requires fifteen students

**\*Biology e52—Biological nature-study.** Lectures, laboratory work, field work and reading. Credit IV. 2 points. Miss STACKPOLE

3:10–5 p. m., Monday and Wednesday. Room 423 T. C. Fee \$12

*Chemistry*

(For general chemistry, see pp. 16, 17)

**\*P. A. Chemistry e3—Brief course for beginners in household arts.** Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss FRANCIS and Miss HONEYWELL

Section II—9–11:50 a. m., Tuesday and Thursday

**\*P. A. Chemistry e3b—Elementary chemistry.** 2 points. Special fee \$16. Not charged at \$6 per point. Miss FRANCIS

7:20–10 p. m., Tuesday

**\*P. A. Chemistry e25—Food industries.** Lectures, readings and demonstrations, varied with excursions to manufacturing establishments and reports on the processes inspected. Credit IV. 3 points. Fee \$18. Professor VULTÉ and Miss VANDERBILT

Section II—10–11:50 a. m., Tuesday and Thursday

Section IV—10–11:50 a. m., Monday and Friday

Room 400 T. C.

Each section requires fifteen students

**\*P. A. Chemistry e31L—Household and organic chemistry.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Professor VULTÉ, Miss VANDERBILT, and Mrs. MCGOWAN

Section II—9–11:50 a. m., Monday and Friday

Section IV—9–11:50 a. m., Tuesday and Thursday

Section VI—2:10–5 p. m., Tuesday and Thursday

Limited sections

Each section requires fifteen students

Room 405 H.A.

**\*P. A. Chemistry e31A.** Credit IV. 4 points. A modification of Chemistry 31 for students in household administration and others desiring a general survey of household chemistry and physics. Miss FRANCIS

2:10–5 p. m., Monday and Wednesday. Room 405 H. A. Special fee \$32. Not charged at \$6 per point

Requires fifteen students

## FINE ARTS

*Art Appreciation and History*

**\*Fine arts e70—Art appreciation. History of art.** Lectures and required reading. Credit IV. 2 points. Miss BLISS, Miss DEMENT and Mr. MARTIN  
4:10-5:30 p. m., Tuesday. Horace Mann Auditorium. Fee \$12

*Art Structure*

**\*Fine arts e1—Art structure A.** For teachers, designers, illustrators, craftsmen and painters. Lectures and studio work. Credit IV. 3 points. Fee \$18. Professor CORNELL and Miss TANNAHILL

Section II—2:10-5 p. m., Tuesday and Thursday.

**\*Fine arts e2—Art structure B.** Continuation of Fine Arts I. Lectures and studio work. Credit IV. 3 points. Fee \$18. Professor CORNELL, Miss TANNAHILL, and Miss NORTHRUP

Section I—9-11:50 a. m., Monday and Wednesday

Section II—9-11:50 a. m., Tuesday and Thursday. Room 430 Macy

Section III—9-11:50 a. m., Monday and Wednesday. Room 507 H. A.

An evening class will be organized for Monday, Wednesday, and Friday evenings, 8-10, if twenty-five students apply

Room 430 Macy

Prerequisite: Fine Arts 1. Design or drawing in other schools cannot be accepted as equivalent of Fine Arts 1 or 2.

**\*Fine arts e3—Freehand drawing.** Credit IV. 1 point. Fee \$6. Mr. MARTIN

Section IV—4:10-6 p. m., Wednesday. (Register for Fine arts e3b below.)

Each section requires fifteen students

**Fine arts e3b—Section IV of above course.** 1 point. Fee \$6

4:10-6 p. m., Wednesday

**Fine arts e82a—Art structure Da.** Lectures and studio work. 1½ points. Miss TANNAHILL

Three hours outside work per week

Prerequisite: Fine Arts 49-50.

NOTE. Fine Arts e81a-82a alternates with Fine Arts 49-50.

**\*Fine arts e26—Clay modeling and pottery.** 2 points. Special fee \$16. Not charged at \$6 per point. Mr. UPJOHN

Section I—3:10-5 p. m., Wednesday and Friday

Section II—2:10-4 p. m., Tuesday and Thursday

Section III—10-11:50 a. m., Tuesday and Thursday

Each section requires fifteen students

Prerequisite: Fine arts 3 or equivalent.

**\*Fine arts e54—Drawing and painting.** Credit IV. 2 points. Special fee \$16. Not charged at \$6 per point. Mr. MARTIN

Section I—9-10:50 a. m., Tuesday and Thursday

Section II—2:10-4 p. m., Wednesday and Friday

Each section requires fifteen students

**Fine Arts e54b—Drawing and Painting.** 1 point. Fee \$6. Mr. MARTIN  
9-10:50 a. m., Saturday, Room 435 Macy

**\*Fine arts e83-84—Painting.** Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Professor BEMENT

9-11:50 a. m., Monday, Wednesday and Friday. Room 426 Macy

*House Design and Decoration*

**Fine arts e11—Art structure E.** Lectures and studio work in preparation for house design. 3 points. Fee \$18. Mr. MEEKER

Section II—9-11:50 a. m., Tuesday and Thursday

Room 505 H. A.

Requires fifteen students

**Fine arts e58—Furniture design.** 1½ points. Fee \$9. Mr. MEEKER

9-11:50 a. m., Saturday, Room 505 H. A.

Requires fifteen students

Prerequisites: Fine arts 1, 2 (or 11, 41), Drawing 3-4.

**Fine arts e80—Home furnishing.** Lectures, readings and reports. 3 points. Fee \$18. Mrs. ACKERMAN

9-11:50 a. m., Tuesday and Thursday. Room 101 H. A.

Requires fifteen students

**Fine arts e90—House design B.** 3 points. Special fee \$36. Not charged at \$6 per point. Mr. MORAN

Hours to be arranged. Requires fifteen students

*Costume Design*

**Fine arts e21—Costume design.** Credit IV. 3 points. Miss WILMOT. Fee \$18

9-11:50 a. m., Monday and Friday

For Saturday section (V) register for Fine arts e21b below

Each section requires fifteen students

**Fine arts e21b.** Same as e21. Fee \$9. Miss NORTHRUP

9-11:50 a. m., Saturday, Room 507 H. A.

**\*Fine arts e22L—Costume design for dressmaking.** 3 points. Fee \$18. Miss WILMOT

Section II—2:10-5 p. m., Tuesday and Thursday

Room 305 H. A.

Limited section

Prerequisites: Fine arts 1, 2 or 11, 41, and Clothing 33.

**Fine arts 24—Costume design, advanced.** 3 points. Fee \$18. Miss NORTHRUP

9-11:50 a. m., Tuesday and Thursday, Room 507 H. A.

Prerequisites: Fine arts 21 and Clothing 33.

**Fine arts e181x—Design for school and community festivals.** 2 points. Fee \$12. Miss NORTHRUP

4:10-6 p. m., Friday, and three hours to be arranged



*Art Industries*

**\*Fine arts e32—Design in the art industries.** Lectures and studio work. Credit IV. 3 points. Mr. THATCHER  
9-11:50 a. m., Monday and Wednesday, Room 435 Macy. Fee \$18  
Requires fifteen students

**\*Metalworking e4—Special course for war service.** 2 points. Special fee \$16. Not charged at \$6 per point. Mr. THATCHER  
9-10:50 a. m., Tuesday and Thursday  
Requires fifteen students

**\*Metalworking e6—Jewelry.** Shopwork. Credit IV. 2 points. Fee \$12. Mr. THATCHER  
Section I—2:10-4 p. m., Monday and Wednesday  
Section II—4:10-6 p. m., Monday and Wednesday  
Each section requires fifteen students  
Rooms 26 and 243 Macy

Prerequisites for Sections I and II: Metalworking 1, 2 and 5; and a design course, which may be taken parallel.

*Art Photography*

**\*Fine arts e8—Art photography I.** Lectures and laboratory work. Credit IV. 2 points. Mr. WHITE  
4:10-6 p. m., Wednesday, and 9-10:50 a. m., Saturday. Room 325 T. C. Extra hours desirable but optional. Special fee \$16. Not charged at \$6 per point  
Begins February 8. Requires fifteen students  
Recommended preparatory: Fine arts 1, 2.

**\*Fine arts e38—Art photography II.** Lectures and laboratory work. Credit IV. 2 points. Mr. WHITE  
4:10-6 p. m., Thursday, and 9-10:50 a. m., Saturday. Room 325 T. C. Extra hours desirable but optional. Special fee \$16. Not charged at \$6 per point.  
Begins February 8. Requires fifteen students  
Prerequisite: Art photography 1 or equivalent.

*Mechanical Drawing*

Certain specially applied courses in mechanical drawing offered in the School of Practical Arts are open to Extension students who have completed the courses described in the annual Announcement. See the *Announcement of the School of Practical Arts* and consult the Director of that School.

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Other and more advanced courses in fine arts described in the *Announcement of the School of Practical Arts* may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor Dow.

**HOUSEHOLD ARTS**

(See Cookery (p. 53), Nutrition and Food Economies (p. 54), Textiles and Clothing (p. 54), Household Arts—Fine Arts (p. 51), Household Administration (p. 57).

*Cookery*

The classes in cookery meet in Rooms 201-214 Household Arts Building, Teachers College.

*Costume* for foods and cookery laboratories: Students are requested to wear white cotton clothing; plain skirt; tailored waist; plain white collar; no color in ties or bows of neckwear; long plain white apron with bib (for laboratory only); little, if any jewelry.

*Limited sections:* For all 'limited' courses (indicated by **L** following the number, e.g., **Cookery e2L**) students must reserve places before completing registration. See p. 48.

Any limited section with less than fifteen students may be discontinued after the first lesson.

**Cookery e1—Technology of cookery.** Lectures, demonstrations and laboratory work. Credit IV. 2 points. Fee \$12. Professor VAN ARSDALE, Miss COLMAN and Miss CONWAY

Section II—1:10-2 p. m., Monday, Wednesday and Friday

**\*Cookery e1a—Lectures on technology of cookery.** 1 point supplementary to other household arts courses. Fee \$6. Professor VAN ARSDALE

1:10 p. m., Wednesday

**\*Cookery e2L—Elements of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss FRAME  
Section II—2:10-5 p. m., Tuesday and Thursday

**\*Cookery e3L—Principles of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss STONE  
Section IX-X—Saturday, throughout the year. (Register for Cookery e3b below)

Prerequisite or parallel: General chemistry and Cookery 1.

**\*Cookery 3bL—Section X of above course.** Credit IV. 3 points for the year. Special fee \$12 each Session

9-11:50 a. m., Saturday. Began September 28

**\*Cookery e41L—Home cookery and table service.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss FRAME

Section VII-VIII—Saturday, throughout the year (Register for Cookery e41b below)

Section X—7-9:50 p. m., Monday and Wednesday. Begins February 10.

**\*Cookery e41bL—Section VIII of above course.** 4 points for the year. Special fee \$16 Spring Session

9-11:50 a. m., Saturday. Began September 28

**\*Cookery e61—Lecture—demonstrations in the new cookery.** Credit IV. 3 points. Fee \$18. Miss SHAPLEIGH

Section II—9-11:50 a. m., Monday and Friday

Prerequisite or parallel: Cookery 1.

Prerequisite: Cookery 3 and 41 or equivalents.

**\*Cookery e75L—Large quantity cookery.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss LA GANKE

Section IV—7-9:50 p. m., Monday and Wednesday. Begins February 10

Prerequisites: Cookery 3, 4 and 4r. Parallel: Courses in Administration and Nutrition.

**\*Cookery e81L—Practice in demonstration cookery.** 3 points. Special fee \$24. Not charged at \$6 per point. Miss SHAPLEIGH and Miss BARROWS  
Section II—9-11:50 a. m., Tuesday and Thursday.

Prerequisite for extension students: experience in teaching cookery and nutrition.

**Cookery e90—History of cookery.** Credit IV. 2 points. Fee \$12. Miss SHAPLEIGH

Section II—1:10-3 p. m., Friday

**Cookery e42L—Elementary cookery.** No credit. Special fee \$30. Not charged at \$6 per point. Miss FRAME

Section II—9-11:50 a. m., Monday and Wednesday. Begins February 10.  
Room 206 H. A.

**Cookery e48L—Advanced cookery for the changing conditions.** No credit. Special fee \$36. Not charged at \$6 per point. Professor VAN ARSDALE, Mrs. GUNN, and associates

Section II—2:10-5 p. m., Tuesday and Thursday. Begins February 11.

Prerequisite: Cookery e42 or equivalent.

Other and more advanced courses in cookery, described in the *Announcement of the School of Practical Arts* may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor VAN ARSDALE

### *Nutrition and Food Economics*

**\*Nutrition e1—Elementary food economics.** Lectures, recitations and laboratory work. Credit IV. 2 points. Fee \$12. Professor SHERMAN, Miss SOUTHWORTH and Miss BARTO

Section II—9-11:50 a. m., Saturday

Rooms 400 Teachers College and 401 H. A.

Prerequisites: An elementary knowledge of cookery equivalent to Cookery 3.

### *Textiles and Clothing*

*Limited sections:* For all courses announced as 'limited sections', students must reserve places at the time of registration. See p. 48.

**\*Textiles e31b—Textile fabrics.** Lectures and laboratory work. Credit IV. 1 point supplementary to other textile work. Fee \$6. Miss BALDT

Section II—10-11:50 a. m., Wednesday

Room 302 H. A.

Prerequisite: Textiles 31a.



**\*Textiles e31c—Textile chemistry.** Laboratory work. Credit IV. 1 point supplementary to other textile or clothing work. Special fee \$8. Not charged at \$6 per point. Mrs. MCGOWAN

Section II—2:10-4 p. m., Tuesday

Section IV—10-11:50 a. m., Thursday

Room 509 H. A.

Prerequisites: Textiles 31a, Chemistry 3 or its equivalent.

**Textile manufacturing**—See under Industrial arts, p. 59

**\*Clothing e5L—Elementary clothing and handwork.** For teachers. Laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss WHITE

Section IV—9-11:50 a. m., Tuesday and Thursday

Students provide required material.

This course, or its equivalent, is prerequisite to all dressmaking courses.

Parallel or prerequisite: Fine arts I or II.

**\*Clothing e15L—Drafting and dress design.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss BALDT

Section IV—2:10-5 p. m., Monday and Friday

Students provide required materials; approximate cost, \$5.

This course is prerequisite to all other dressmaking courses.

**\*Clothing e15bL.** Section X of Clothing 15. Credit IV. 3 points for the year. Special fee \$12. Not charged at \$6 per point  
9-11:50 a. m., Saturday. Began September 28.

**\*Clothing e35L—Dressmaking, elementary.** For teachers. Laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss BALDT

Section II—9-11:50 a. m., Monday and Friday

Students provide required material; approximate cost \$25.

Prerequisites: Clothing 5, 15. Fine arts I or II.

**Clothing e55L—Dressmaking, intermediate.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point.

Section V—9-11:50, Monday, Tuesday, Wednesday, Thursday, Friday, first half of Spring Session. Repeated as

Section VI—Second half of Spring Session

**\*Clothing e45L—Dress design.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss WILMOT

Section II—2:10-5 p. m., Monday and Friday

Students provide required materials; approximate cost \$5.

Prerequisite: Clothing 5, 15, 33, 35 and Fine arts I.

**\*Clothing e65—Embroidery.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss WHITE

2:10-5 p. m., Monday and Friday

Room 301 H. A.

**\*Clothing e27—Millinery, elementary.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Mrs. TOBEY  
Section IV—9-11:50 a. m., Tuesday and Thursday  
Room 302 H. A.

**Textiles e1—Textile economics and design.** For teachers. Lecture work. Credit IV. 1 point supplementary to other textile or clothing work. Fee \$6. Miss EVANS

Section II—12-12:50 p. m., Saturday. Room 301 H. A. Begins February 8

*Courses for Home Workers*

**Clothing e1L—Sewing, elementary.** Laboratory work. Fifteen three-hour lessons. No credit. Fee \$15. Miss EVANS

Section II—9-11:50 a. m., Wednesday. Begins February 12. Room 301 H. A.

Limited section. Requires fifteen students

Students provide required materials.

**Clothing e11L—Children's clothes.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$15. Miss EVANS

Section II—10-11:50 a. m., Tuesday and Thursday. Begins February 11. Room 311 H. A.

Limited section. Requires fifteen students

Students provide required materials.

**Clothing e21L—Costume accessories.** Laboratory work. Fifteen three-hour lessons. No credit. Fee \$15. Mrs. NELSON

Section II—9-11:50 a. m., Wednesday. Spring Session. Begins February 12. Room 311 H. A.

Limited sections. Requires fifteen students.

This course includes the making of bags, belts, scarfs, and cuff and collar sets. A few lessons will be devoted to dyeing for embroidery, batik, and tie-dyeing for scarfs, etc.

**Clothing e31L—Dressmaking.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$15. Miss EVANS

Section II—10-11:50 a. m., Tuesday and Thursday. Begins February 11

Section IV—2:10-4 p. m., Tuesday and Thursday. Begins February 11

Room 311 H. A.

Limited sections. Each section requires fifteen students

**Clothing e71L—Dressmaking, advanced.** Fifteen three-hour lessons. No credit. Fee \$15. Mrs. NELSON

Section II—9-11:50 a. m., Wednesday. Begins February 12

Room 311 H. A.

Requires fifteen students

Students provide required materials.

**Clothing e7L—Millinery, elementary.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$15. Mrs. NELSON

Section II—10-11:50 a. m., Tuesday and Thursday. Begins February 11

Section IV—2:10-4 p. m., Tuesday and Thursday. Begins February 11  
Room 311 H. A.

Each section requires fifteen students

Students provide materials.

**Clothing e17L—Millinery, advanced.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$15. Mrs. NELSON

10-11:50 a. m., Tuesday and Thursday. Begins February 11

Room 311 H. A.

Requires fifteen students

Prerequisite: Clothing e7. Students provide required materials.

Other and more advanced courses in clothing, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor FALES

### HOUSEHOLD ADMINISTRATION

**\*Administration e1L—Housewifery and house management.** Discussions, observation and practical work. Credit IV. 2 points. Fee \$12. Miss BALDERSTON

Section II—2:10-4 p. m., Monday and Wednesday

Section IV—9-10:50 a. m., Monday and Friday

Room 53 H. A.

Limited sections

**\*Administration e11L—Domestic laundering.** Discussions, demonstrations and laboratory work. Credit IV. 2 points. Fee \$12. Miss BALDERSTON and assistant

Section II—9-11:50 a. m., Tuesday

Rooms 53 and 57 H. A.

Limited sections

Recommended preparatory: Chemistry 1 or 3.

**\*Administration e21—Marketing.** Credit IV. 2 points. Fee \$12. Miss LA GANKE

Section IV—10-11:50 a. m., Wednesday

Other and more advanced courses in administration, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor GUNTHER

### PRACTICAL ARTS PHYSICS

Laboratory ticket: Students in all courses in physics are required to purchase from the Bursar a laboratory breakage ticket, good for all science departments, price \$2. Unused coupons are redeemable at the end of any Session.

Students who apply for exemption from required courses in physics on the basis of study previously completed at other colleges, must submit note-books, names of text-books used and brief outlines of previous work.



**Physics e1L—General course in applied physics.** Lectures, excursions, and laboratory work. 4 points. Fee \$24. Mr. GOOD and assistants  
 Section IV—2:10-5 p. m., Monday and Wednesday  
 Limited sections. Room 408 T. C.

**Physics e1a—Lectures in Physics I.** 2 points. Fee \$12. Mr. GOOD  
 First hour of each three-hour period stated above.

**Physics e31L—Household physics.** Lectures, excursions, and laboratory work. 2 points. Fee \$12. Mr. GOOD and assistants  
 Section IV—2:10-5 p. m., Thursday  
 Limited section. Room 408 T. C.  
 Prerequisite: Physics I.

**Music e31—Sound as related to music.** Lecture-demonstrations, excursions and laboratory work. 2 points. Fee \$12. Mr. GOOD and others  
 See description on page 60

**Household economics e79—Household economic science.** Credit IV. 2 points. Fee \$12. Professor ANDREWS  
 Section II—3:10-4 p. m., Tuesday and Thursday  
 Section IV—4:10-5 p. m., Monday and Wednesday  
 Each section requires fifteen students

**Household economics e81—Household accounts.** Credit IV. 2 points. Professor ANDREWS  
 2:10-4 p. m., Friday. Fee \$12  
 Requires fifteen students

## INDUSTRIAL ARTS

### *Art Industries*

For courses in hammered metal, silversmithing, jewelry and color printing, see under Fine Arts.

### *Industrial Arts Education*

**\*Industrial arts e144—Industrial arts for the elementary grades.** Credit IV. 2 points. Fee \$12. Miss PATRICK  
 Section I—2:10-4 p. m., Monday and Wednesday  
 Section II—3:10-5 p. m., Tuesday and Thursday  
 Section III—9 a. m.-12:20 p. m., Saturday

**\*Industrial arts e146—Teaching industrial arts in elementary schools.** Credit IV. 2 points. Fee \$12. Professor BONSER and Mrs. MOSSMAN

**Industrial Arts e148—Industrial arts for junior and regular high schools.** Discussions, reports, shop work, and excursions. Credit II, IV. 2 points. Fee \$12. Mr. BOWMAN  
 9-11:50 a. m., Saturday. Room 29 Macy.

**Industrial Arts e150—Analysis of industries for teaching and vocational guidance.** Credit II, IV. 3 points. Fee \$18. Mr. BOWMAN  
 4:10-6 p. m., Monday and Wednesday. Room 29 Macy.

*Textile Industries*

The following courses of twelve lessons each may be given on certain evenings 8-10 p. m., beginning in 1919: (a) woolens, (b) silks, ribbons, and pile fabrics, (c) cottons and cotton mixtures. Special circulars may be obtained from the office of the Secretary of Teachers College.

Other and more advanced courses in industrial arts, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to the instructor.

*Mathematics*

**\*P. A. Mathematics e32—Industrial mathematics.** Credit IV. 2 points.  
Mr. BRECKENRIDGE

11 a. m.—12:50 p. m. Saturday. Fee \$12

Requires fifteen students

Prerequisite: College entrance mathematics or an equivalent experience in mechanic arts.

**MUSIC***General Art of Music*

**\*P. A. Music e26—Sight singing.** Credit IV. 2 points. Mr. KRAFT  
3:10-4 p. m., Monday, Wednesday and Friday. Room 118 T. C. Fee \$12  
Requires fifteen students

**\*P. A. Music e14—Tone thinking.** Music dictation and reading, including harmonic and melodic material. Credit IV. 2 points. Mr. KRAFT  
4:10-5 p. m., Monday, Wednesday and Friday. Room 118 T. C. Fee \$12  
Requires fifteen students

**Music e22—Epochs in the development of music.** Lectures with musical illustrations and recitals. 2 points. Fee \$12. Professor FARNSWORTH and Miss WIETHAN

4:10-5:30 p. m., Thursday. Room 502 Horace Mann School

**\*P. A. Music e66—Chorus singing and conducting.** Credit IV. 2 points  
Mr. KRAFT

11-11:50 a. m., Tuesday, Wednesday and Thursday. Room 118 T. C. Fee \$12

Requires fifteen students

*Technical Music Courses*

**\*P. A. Music e16—Voice: First year.** Individual work in groups limited to four. Credit IV. 2 points. Special fee for Sections II and III, \$25. Not charged at \$6 per point

Section II—Room 605 H. A. Miss DASCHBACH

In this section special groups are formed for kindergartners, practice being given in the music they are required to use. Hours to be arranged

Section III—Room 605 H. A. Hours to be arranged

**\*P. A. Music e36, e56, e76—Advanced courses in voice.** Hours to be arranged. Given in groups; under same conditions as to credit, hours and fees as for the same instructors in Music e15-16. Consult Professor FARNSWORTH

**Music e31—Sound as related to music.** Lectures, excursions and laboratory work. 2 points. Fee \$12. Mr. GOOD, Mr. KRAFT, Professors WOOD and WHITLEY  
2:10-5 p. m., Tuesday. Room 408 T. C.

**\*P. A. Music e28—Piano: First year.** Credit IV. 2 points. Requires at least six hours' practice a week. Special fee \$25. Not charged at \$6 per point. Mrs. COWL

(a) Individual work in groups limited to four. Once a week

(b) Class lessons: once a week, combining all groups

4:10-5 p. m., Tuesday, and other hours to be arranged with the instructor, Mrs. COWL

Room 118 T. C.

**\*P. A. Music e38, e58, e68—Advanced courses in piano.** Hours to be arranged. Given in groups; under same conditions as to credit, hours and fees as for the same instructors in Music 17-18. Consult Professor FARNSWORTH

**Piano practice**—Fee for use of pianos by students registered for eight or more points in a Session is \$4 per Session for six hours or less per week. Arrange hours at the office of Practical Arts.

**\*P. A. Music e20—Organ.** Credit IV. 2 points. Special fee \$35. Not charged at \$6 per point

Individual work in groups. Requires three students to form a group; limited to four. Work and hours to be arranged. Consult Professor FARNSWORTH

Prerequisite: Elementary piano-playing

**\*P. A. Music e30—Organ.** Credit IV. 2 points. Special fee \$50. Not charged at \$6 per point. Mr. LAMOND

**\*P. A. Music e40—Violin.** Credit IV. 2 points. Special fee \$35. Not charged at \$6 per point. Mr. STOWELL

Hours to be arranged. Room 603 H. A.

Individual work in groups limited to four. Requires three students to form a group.

Other courses in music for teachers, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor FARNSWORTH.

### *Speech*

**Speech e1A—Voice and diction, introductory.** Lectures, class exercises, and individual practice. Credit IV. 2 points. Fee \$12. Professor LATHAM and assistant

10-10:50 a. m., Tuesday and Thursday

Requires fifteen students



**Speech e4—Story-telling and reading, introductory.** Lectures, practice, criticism, and recitals. Credit IV. 2 points. Fee \$12. Mrs. HALLOCK

4:10-5 p. m., Tuesday and Thursday

Requires fifteen students

**Speech e3A.** Brief course. Similar to Speech e3-e4. 2 points. Fee \$12

10-11:50 a. m., Saturday

Requires fifteen students

**Speech e182—Dramatization.** Investigation and practical work. 2 points. Fee \$12. Professor LATHAM and others

9-10:50 a. m., Saturday

Requires fifteen students

### NURSING AND HEALTH

**\*Nursing e3—Physical care of infants and small children.** Lectures, demonstrations and readings. Credit IV. 2 points. Fee \$12. Dr. KENYON and Miss HAWKINSON

Section II—3:10-5 p. m., Monday

Section IV—10-11:50 a. m., Tuesday

**\*Nursing e5—Elementary home nursing and first aid.** Lectures, demonstrations and laboratory practice. Credit IV. 2 points. Fee \$12. Miss HAWKINSON

Section II—2:10-5 p. m., Thursday

Section IV—2:10-5 p. m., Friday

Each section requires fifteen students

**Biology e4x—Biology for sex-education.** 1 point when taken parallel with any course in hygiene or biology. Open only to women. Miss STACKPOLE  
5:10-6 p. m., Monday. Room 421 T. C. Fee \$6

**Psychology e6—Psychology for nurses and social workers.** Lectures and discussions. Credit IV. 2 points. Miss MURDOCK

8-9:40 p. m., Tuesday, Room 407a Schermerhorn. Fee \$12

**P. A. Chemistry e3b—Elementary chemistry.** 2 points. Special fee \$16. Not charged at \$6 per point. (For description, see p. 49)

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Other and more advanced courses in nursing and health, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor NUTTING

### PHYSICAL EDUCATION

The following extension courses are given in the Thompson Building of Teachers College, February 1, 1919, to May 15, 1919. Second half-year (Spring Session) begins February 5

Lockers are available for women only. A deposit of twenty-five cents must be made for each locker key. This must be redeemed and gymnasium suits removed before June 6

The swimming pool is reserved for women and children

Gymnasium shoes must be soft-soled and without heels

Information concerning gymnasium and swimming suits may be obtained from the Secretary of the Department of Physical Education

### Special Lessons

A number of special series of lessons for women and children in gymnastics, folk and natural dancing, swimming, and corrective gymnastics will be given from February 5, 1919, to May, 1919, in the Thompson Building of Teachers College by the School of Practical Arts in cooperation with the University Institute of Arts and Sciences.

**\*Physical education e2—Elementary practice for women.** Credit IV.  
1 point. Fee \$6  
Section I—4:10-5 p. m., Tuesday and Thursday, Room 255 Thompson  
Section II—5:10-6 p. m., Monday and Wednesday

**\*Physical education e4—Advanced practice for women.** Credit IV.  
1 point. Fee \$6. Miss YUNCK  
3:10-4 p. m., Monday and Wednesday

**\*Physical education e178—The dramatic game.** Practice. Credit IV.  
2 points. Miss COLBY  
5:10-6 p. m., Tuesday and Thursday, Thompson Gymnasium. Fee \$12

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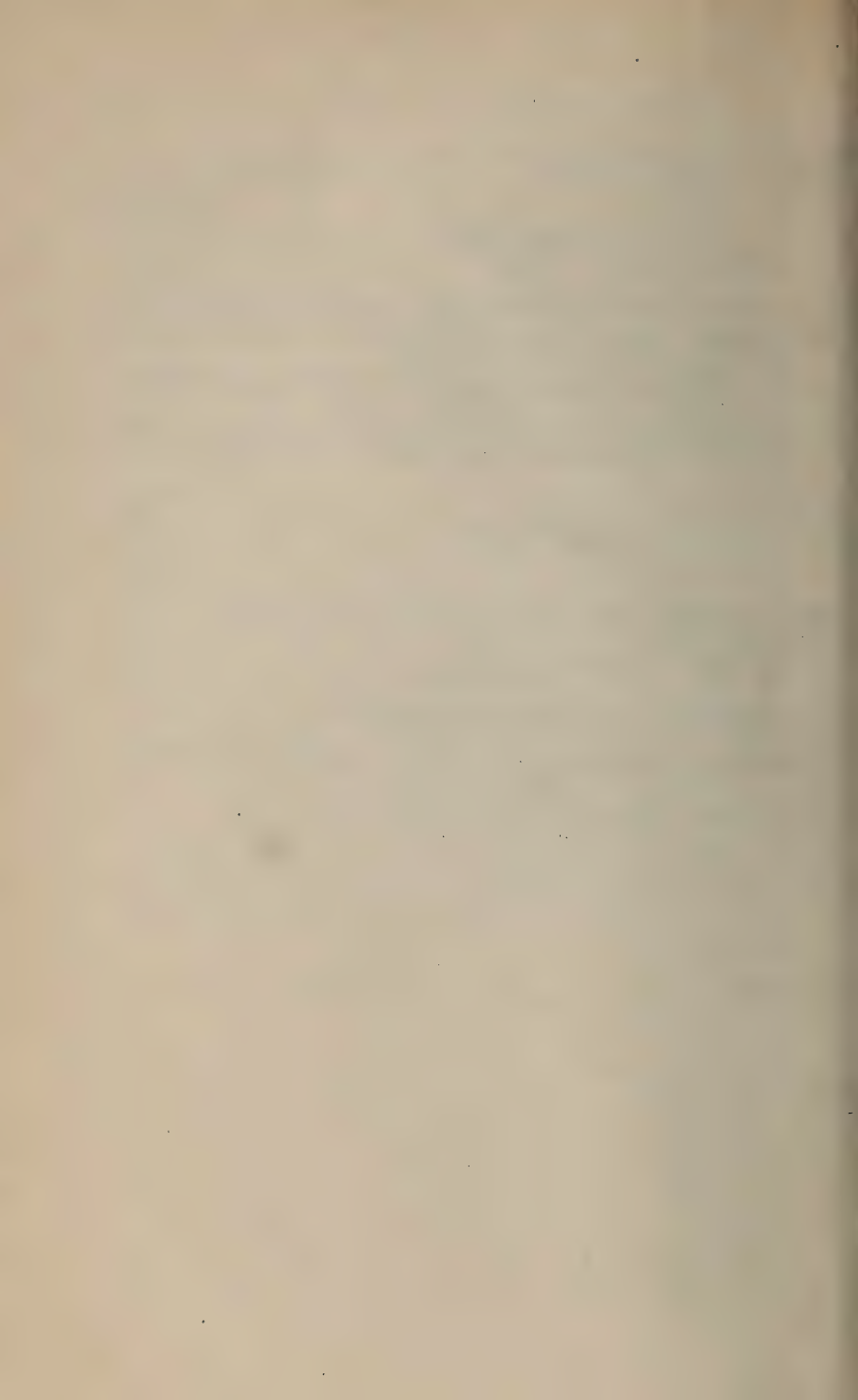
Other courses in physical education, with numbers below 100, described in the *Announcement of the School of Practical Arts*, may be made available for specially qualified non-matriculated students who bring to the Director of the School of Practical Arts the written approval of Professor WOOD

## CALENDAR

1919

- (For full academic calendar, apply to the Secretary of Columbia University)
- Jan. 30—Thursday. **Registration** for the Spring Session in Extension Teaching (including the payment of fees) **begins**
- Feb. 5—Wednesday. **Spring Session begins. Classes in Extension Teaching begin**
- Feb. 15—Saturday. Last day for changes in registration in Extension Teaching
- Feb. 22—Saturday. Washington's Birthday, holiday
- April 17—Thursday  
to  
April 21—Monday, inclusive, Easter holidays
- May 26—Monday  
to  
May 31—Saturday, inclusive, final examinations in Extension Teaching
- May 30—Friday. Memorial Day, holiday
- June 4—Wednesday, **Commencement Day**
- June 11—Wednesday. **Spring Session ends**
- July 7—Monday. Twentieth **Summer Session begins**
- Aug. 15—Friday. Twentieth **Summer Session ends**
- Sept. 17—Wednesday. **Registration** for the Winter Session in Extension Teaching (including the payment of fee) **begins**
- Sept. 25—Thursday. Classes in Extension Teaching begin





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nineteenth Series, No. 23

April 28, 1919



# Columbia University Bulletin of Information

## EXTENSION TEACHING ANNOUNCEMENT

AFTERNOON, EVENING, AND SATURDAY CLASSES  
MORNINGSIDE HEIGHTS

1919-1920

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in the City of New York  
MORNINGSIDE HEIGHTS  
NEW YORK CITY

## **Columbia University Bulletin of Information**

[Issued thirty-six times during the academic year, monthly in November and weekly between December and July. Entered as second-class matter August 10, 1918, at the Post Office at New York, N. Y., under the Act of August 24, 1912. Acceptance for mailing at a special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized.] These include:

1. Annual Reports of the President and Treasurer to the Trustees.
2. The Catalogue of the University, price 25 cents, and the Announcements of the several Colleges and Schools, and of certain Divisions, issued in the Spring, and relating to the work the next year. These are made as accurate as possible, but the right is reserved to make changes in detail as circumstances require. The current number of any of these Announcements may be sent without charge upon application to the Secretary of the University.

A. P.-43,000-1919.

**The office of Extension Teaching is Room 301 University Hall**

**A special circular will be issued  
for courses added after June 1**



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Instructor, Extension Teaching, Columbia	
AZUBAH JULIA LATHAM, A.B. . . . .	<i>Speech</i>
Assistant professor, Columbia	
MINOR H. LATHAM, A.M. . . . .	<i>English</i>
Instructor, Columbia	

JOSEPH LAUBER, M.E. . . . .	<i>Architecture</i>
Instructor, Columbia	
ALMA DE L. LEDUC, PH.D. . . . .	<i>French</i>
Instructor, Columbia	
EDWARD M. LEHNERTS, A.M. . . . .	<i>Geology</i>
Lecturer, Teachers College	
WILLIAM LILLY, LL.B. . . . .	<i>Business Law</i>
Member of the firm of Lyon and Lilly, Counselors at Law; instructor, Summer Session, Columbia	
ARMIN K. LOBECK, PH.D. . . . .	<i>Geography</i>
Instructor, Extension Teaching, Columbia	
LOUIS AUGUSTE LOISEAUX, B. ÈS S. . . . .	<i>Spanish</i>
Associate professor, Columbia	
HASTINGS LYON, LL.B. . . . .	<i>Finance and Business Law</i>
Assistant professor, Columbia	
JOHN H. H. LYON, LITT.D., PH.D. . . . .	<i>English</i>
Assistant professor, Columbia	
WILLIAM H. MCCASTLINE, M.D. . . . .	<i>University Physician</i>
University Medical Officer, Columbia	
HELEN MCCLEES, PH.D. . . . .	<i>Greek and Latin</i>
Instructor, Extension Teaching, Columbia	
CHARLES FLOWERS MCCOMBS, B.L.S. . . . .	<i>Library Economy</i>
Readers' Division, New York City Public Library	
NELSON GLENN MCCREA, PH.D. . . . .	<i>Latin</i>
Anthony professor, Columbia	
ROSWELL CHENEY MCCREA, PH.D. . . . .	<i>Economics</i>
Professor, Columbia	
ELLEN BEERS MCGOWAN, B.S. . . . .	<i>Household Arts</i>
Instructor, Teachers College	
JAMES HOWARD MCGREGOR, PH.D. . . . .	<i>Zoology</i>
Associate professor, Columbia	
MATILDA I. MCKEOWN, A.M. . . . .	<i>Household Arts</i>
Lecturer, Teachers College	
DONALD SAGE MACKAY . . . . .	<i>Philosophy</i>
Lecturer, Extension Teaching, Columbia	
GRACE MACLEOD, A.M. . . . .	<i>Household Arts</i>
Instructor, Teachers College	
ARTHUR WHITTIER MACMAHON, A.M. . . . .	<i>Government</i>
Instructor, Columbia	
CHARLES J. MARTIN, B.S. . . . .	<i>Fine Arts</i>
Assistant professor, Columbia	
DANIEL GREGORY MASON, A.B. . . . .	<i>Music</i>
Associate professor, Columbia	
HAROLD RAYMOND MEDINA, LL.B. . . . .	<i>Law</i>
Associate, Columbia	

JULIO MERCADO, B. EN L. . . . .	<i>Spanish</i>
Instructor, Extension Teaching, Columbia	
CARL JOHN MERNER, B.P.E. . . . .	<i>Physical Education</i>
Instructor, Columbia	
MABEL WITTE MERRITT, LL.B. . . . .	<i>Law</i>
Instructor, Extension Teaching, Columbia	
GEORGE L. MEYLAN, M.D. . . . .	<i>Physical Education</i>
Professor, Columbia	
CHARLES MILLER, LL.M. . . . .	<i>Stenography and Typewriting</i>
Instructor, Summer Session and Extension Teaching, Columbia	
NINA MILLER, M.S. . . . .	<i>Accounting</i>
Instructor, Columbia	
WILLIAM PEPPERELL MONTAGUE, PH.D. . . . .	<i>Philosophy</i>
Associate professor, Columbia	
ROBERT H. MONTGOMERY, C.P.A. . . . .	<i>Accounting</i>
Professor, Columbia	
PARKER THOMAS MOON, A.M. . . . .	<i>History</i>
Instructor, Columbia	
FRANK GARDNER MOORE, PH.D. . . . .	<i>Latin</i>
Professor, Columbia	
ROBERT J. MOORE, A.M. . . . .	<i>Chemistry</i>
Instructor, Columbia	
ALBERT MORAWSKI-NAWENCH . . . . .	<i>Polish</i>
Instructor, Extension Teaching, Columbia	
JOHN HAROLD MORECROFT, E.E., B.S. . . . .	<i>Electrical Engineering</i>
Associate professor, Columbia	
O. S. MORGAN, PH.D. . . . .	<i>Agriculture</i>
Professor, Columbia	
WILLIAM E. MORGAN, A.B. . . . .	<i>Chemistry</i>
Instructor, Columbia	
WILLIAM THOMAS MORGAN, PH.D. . . . .	<i>History</i>
Instructor, Columbia	
FREDERICK K. MORRIS, A.M. . . . .	<i>Geology</i>
Instructor, Columbia	
LEIGHTON B. MORSE, PH.D. . . . .	<i>Physics</i>
Instructor, Summer Session and Extension Teaching, Columbia	
LOIS COFFEY MOSSMAN, B.S. . . . .	<i>Education</i>
Instructor, Teachers College	
HENRI FRANÇOIS MÜLLER, PH.D. . . . .	<i>French</i>
Assistant professor, Columbia	
HERMANN J. MULLER, PH.D. . . . .	<i>Zoology</i>
Instructor, Columbia	
GLEN H. MÜLLIN . . . . .	<i>English</i>
Instructor, Extension Teaching, Columbia	



- HENRY FRASER MUNRO, A.M. . . . . *International Law*  
Instructor, Extension Teaching; lecturer, Columbia
- THOMAS MUNRO, PH.D. . . . . *Philosophy*  
Instructor, Extension Teaching, Columbia
- KATHARINE MURDOCK, PH.D. . . . . *Psychology*  
Instructor, New York School of Philanthropy and Bellevue Training School for Nurses;  
instructor, Extension Teaching, Columbia
- DAVID SAVILLE MUZZEY, PH.D. . . . . *History*  
Associate professor, Columbia
- ARTHUR C. NEISH, PH.D. . . . . *Chemistry*  
Associate professor, Columbia
- CHRISTINE WARNER NELSON . . . . . *Household Arts*  
Instructor, Teachers College
- BELLE NORTHRUP, B.S. . . . . *Fine Arts*  
Instructor, Teachers College
- TORIBIO ESQUIVEL OBREGON, LL.D. . . . . *Commercial Law*  
Instructor, Extension Teaching, Columbia
- HENRI C. OLINGER, A.M. . . . . *French*  
Instructor, New York University; instructor, Summer Session and Extension Teaching,  
Columbia
- EDSON L. OUTWIN . . . . . *Accounting*  
Instructor, Columbia
- HELEN HUSS PARKHURST, PH.D. . . . . *Philosophy*  
Instructor, Columbia
- SARA LYMAN PATRICK, A.M. . . . . *Industrial Arts Education*  
Instructor, Teachers College
- FRANCES TAYLOR PATTERSON . . . . . *Photoplay Composition*  
Instructor, Summer Session and Extension Teaching, Columbia
- FRANK ALLEN PATTERSON, PH.D., *Assistant to Director, Morningside* . . . *English*  
Associate professor, Columbia
- MARY HENLEY PEACOCK, PH.B. . . . . *Household Arts*  
Instructor, Teachers College
- JOSEPH LOUIS PERRIER, PH.D. . . . . *French*  
Lecturer, Columbia
- AUGUST PETERSON . . . . . *Physical Education*  
Athletic trainer and coach, Columbia
- ALBERT T. POFFENBERGER, PH.D. . . . . *Psychology*  
Assistant professor, Columbia
- EMIL LEON POST, A.M. . . . . *Mathematics*  
Lecturer, Columbia
- BLANCHE PRENEZ . . . . . *French*  
Lecturer, Columbia
- MAURICE PRÉVOT, A.D.G.S. . . . . *Architecture*  
Instructor, Extension Teaching, Columbia

- JOHN DYNELEY PRINCE, PH.D. . . . . *History and Russian*  
Head of Slavonic department; professor, Columbia
- GEORGE RADIN . . . . . *Serbo-Croatian*  
Instructor, Extension Teaching, Columbia
- MAX RADIN, PH.D. . . . . *Semitic*  
Instructor, Extension Teaching, Columbia
- WALTER RAUTENSTRAUCH, M.S. . . . . *Factory Management*  
Consulting engineer, professor of mechanical engineering, Columbia
- KATHARINE C. REILEY, PH.D., *Assistant to Director* . . . . . *Greek and Latin*  
Adviser to women, Extension Teaching; assistant professor, Columbia
- MABEL L. ROBINSON, PH.D. . . . . *Vocational Guidance*  
Educational investigator, Carnegie Foundation; instructor, Extension Teaching, Columbia
- JOHN F. D. ROHRBACH, C.P.A. . . . . *Accounting*  
Instructor, Extension Teaching, Columbia
- MARY SWARTZ ROSE, PH.D. . . . . *Household Arts*  
Associate professor, Columbia
- FRANK A. ROSS, A.M. . . . . *Sociology*  
Instructor, Columbia
- EDWARD J. RYAN, A.B. . . . . *Stenography and Typewriting*  
Instructor, Extension Teaching, Columbia
- DOROTHY SCARBOROUGH, PH.D. . . . . *English and Secretarial Correspondence*  
Instructor, Summer Session and Extension Teaching; lecturer, Columbia
- CLAUDE EDWARD SCATTERGOOD, M.S., LL.B. . . . . *Business Statistics*  
Lecturer, Columbia
- OTTO P. SCHINNERER, A.M. . . . . *German*  
Instructor, Extension Teaching, Columbia
- HERBERT WALLACE SCHNEIDER, PH.D. . . . . *Philosophy*  
Instructor, Columbia
- FREDERICK WILLIAM SCHOLZ, A.M. . . . . *German*  
Instructor, Columbia
- HENRY H. L. SCHULZE, A.M. . . . . *German*  
Assistant professor, Columbia
- ROBERT LIVINGSTON SCHUYLER, PH.D. . . . . *History*  
Associate professor, Columbia
- MAY KIRK SCRIPTURE . . . . . *Speech*  
Lecturer, Teachers College
- BERTHA E. SHAPLEIGH . . . . . *Household Arts*  
Instructor, Teachers College
- HERBERT N. SHENTON, A.M. . . . . *Sociology*  
Instructor, Columbia
- WILLIAM R. SHEPHERD, PH.D., L.H.D. . . . . *History*  
Professor, Columbia

HENRY CLAPP SHERMAN, PH.D.	<i>Food Chemistry</i>
Professor, Columbia	
CHARLES F. SMITH, B.S.	<i>Scouting</i>
Instructor, Teachers College	
GUY EDWARD SNIDER, PH.D.	<i>Foreign Trade</i>
Assistant professor, College of the City of New York; instructor, Extension Teaching, Columbia	
ALEXANDER GUY HOLBORN SPIERS, PH.D.	<i>French</i>
Associate professor, Columbia	
CAROLINE E. STACKPOLE, A.M.	<i>Biology</i>
Instructor, Teachers College	
HARRISON ROSS STEEVES, PH.D.	<i>English</i>
Associate professor, Columbia	
ARCHIBALD HERBERT STOCKDER, A.M.	<i>Business</i>
Instructor, Extension Teaching; assistant, Columbia	
CORNELIA H. STONE, A.B.	<i>Household Arts</i>
Instructor, Teachers College	
EDGAR S. STOWELL	<i>Music</i>
Instructor, Teachers College	
EDGAR HOWARD STURTEVANT, PH.D.	<i>Latin</i>
Assistant professor, Columbia	
HARVEY JULIAN SWANN, PH.D.	<i>French</i>
Instructor, Extension Teaching, Columbia	
JOHN B. SWINNEY, A.B.	<i>Merchandising Research</i>
Lecturer, Columbia	
SALLIE B. TANNAHILL, B.S.	<i>Fine Arts</i>
Instructor, Teachers College	
RUPERT TAYLOR, PH.D.	<i>English</i>
Instructor, Columbia	
ASHLEY H. THORNDIKE, PH.D.	<i>English</i>
Professor, Columbia	
WILLIAM TILLY	<i>Phonetics</i>
Instructor, Summer Session and Extension Teaching, Columbia	
FREDERICK TILNEY, M.D., PH.D.	<i>Neurology</i>
Professor, Columbia	
EVELYN SMITH TOBEY, B.S.	<i>Household Arts</i>
Instructor, Teachers College	
ARTURO TORRES, A.M.	<i>Spanish</i>
Instructor, Extension Teaching, Columbia	
WILLIAM P. TRENT, D.C.L.	<i>English</i>
Professor, Columbia	
CHARLES BABCOCK UPJOHN	<i>Fine Arts</i>
Instructor, Teachers College	

JOSEPH ANTHONY VAETH, PH.D. . . . .	<i>Spanish</i>
Instructor, New York University; instructor, Extension Teaching, Columbia	
MAY B. VAN ARSDALE, B.S. . . . .	<i>Household Arts</i>
Associate professor, Columbia	
SADIE B. VANDERBILT, B.S. . . . .	<i>Household Arts</i>
Instructor, Teachers College	
LA RUE VAN HOOK, PH.D. . . . .	<i>Greek</i>
Associate professor, Columbia	
THURMAN WILLIAM VAN METRE, PH.D. . . . .	<i>Transportation</i>
Assistant professor, Columbia	
GEORGE HENRY VAN TUYL . . . . .	<i>Commercial Arithmetic</i>
Instructor, Extension Teaching, Columbia	
HERMAN T. VULTÉ, PH.D. . . . .	<i>Household Arts</i>
Assistant professor, Columbia	
HAROLD VANDERVOORT WALSH, A.M. . . . .	<i>Architecture</i>
Instructor, Columbia	
GERALD WEEMAN . . . . .	<i>Physical Education</i>
Instructor, Columbia	
BESSIE SCOTT WHITE . . . . .	<i>Household Arts</i>
Instructor, Teachers College	
CLARENCE HUDSON WHITE . . . . .	<i>Fine Arts</i>
Lecturer, Teachers College	
MAY JOSEPHINE WIETHAN, A.C.M. . . . .	<i>Music</i>
Lecturer, Teachers College	
LAWRENCE A. WILKINS, A.M. . . . .	<i>Spanish</i>
Instructor, Extension Teaching, Columbia	
GERALD THOMAS WILKINSON, A.M. . . . .	<i>French</i>
Instructor, Columbia	
BLANCHE COLTON WILLIAMS, PH.D. . . . .	<i>English</i>
Professor, Hunter College; instructor, Summer Session and Extension Teaching, Columbia	
JESSE FEIRING WILLIAMS, M.D. . . . .	<i>Physical Education</i>
Associate professor, Columbia	
RUTH WILMOT . . . . .	<i>Household Arts</i>
Instructor, Teachers College	
CHARLES-EDWARD A. WINSLOW, A.M. . . . .	<i>Public Health</i>
Lecturer, Teachers College	
EMMA A. WINSLOW, A.M. . . . .	<i>Household Arts</i>
Lecturer, Teachers College	
SAMUEL LEE WOLFF, PH.D. . . . .	<i>English</i>
Instructor, Extension Teaching, Columbia	
THOMAS DENISON WOOD, M.D. . . . .	<i>Physical Education</i>
Professor, Columbia	



ROBERT SESSIONS WOODWORTH, PH.D. . . . .	<i>Psychology</i>
Professor, Columbia	
T. L. WOOLHOUSE . . . . .	<i>Accounting</i>
Instructor, Extension Teaching, Columbia	
A. H. WRIGHT, A.M. . . . .	<i>Chemistry</i>
Laboratory assistant, Columbia	
JAMES J. WRIGHT . . . . .	<i>Stenography and Typewriting</i>
Instructor, Summer Session and Extension Teaching, Columbia	
ABRAHAM YARMOLKINSKI, A.B. . . . .	<i>Russian</i>
Head of Slavonic department, New York City Public Library; instructor, Extension Teaching, Columbia	
CLARENCE HOFFMAN YOUNG, PH.D. . . . .	<i>Greek Archaeology</i>
Professor, Columbia	
BERNADINE MEYER YUNCK . . . . .	<i>Physical Education</i>
Instructor, Teachers College	
HAROLD P. ZOLLER, B.A.RCH . . . . .	<i>Architecture</i>
Instructor, Extension Teaching, Columbia	

## INTRODUCTORY

The Statutes of the University (Section 250) define Extension Teaching as "instruction given by University officers and under the administrative supervision and control of the University, either away from the University buildings, or at the University, for the benefit of students unable to attend the regular course of instruction."

**Students.** Courses in Extension Teaching are planned for two classes of students: *first*, men and women who can give only a portion of their time to study and who desire to pursue subjects included in a liberal education of the character and grade of a college or professional school, but without any reference to an academic degree; *second*, those who look forward to qualifying themselves to obtain in the future academic recognition, involving acceptance of the work which they may satisfactorily complete in Extension Teaching.

**Courses of Instruction.** Under the direction of the University Council courses are offered in Extension Teaching which count toward the degrees of Master of Arts and Doctor of Philosophy.

Regular courses of instruction are offered in Extension Teaching which in many instances are coordinated so as to form the first years of collegiate and professional work, thus providing in the evening at Morningside Heights, and elsewhere, courses in subjects which are generally offered in the freshman, sophomore, and junior years of college, so that students may qualify themselves for admission with advanced standing to Columbia and Barnard Colleges or other institutions as candidates for the degrees of Bachelor of Arts and Bachelor of Science.

There are also offered at Morningside Heights, in the evening, subjects which are required of students of the Schools of Mines, Engineering, and Chemistry, so that a student may pursue some special line of scientific study or prepare himself for advanced study in these Schools. Classes in these schools are open only to those who have had a preliminary course of three years in Columbia College or the equivalent. This preliminary collegiate training may be taken in part or in full in Extension Teaching in the evening by students engaged in business during the day. See pp. 11, 12.

Evening courses are offered in architecture, leading to a certificate, which correspond to courses of the Columbia University School of Architecture.

Evening classes in business, forming a three-year course leading to a certificate and preparing for the State examination for the certificate of Certified Public Accountant, are given at Morningside Heights. A special circular describing these courses in detail will be mailed upon request. See also pp. 7, 8.

A series of courses intended to equip students for the position of private secretary is also offered. These courses are carefully described in a special circular which will be mailed on application. See also pp. 14, 15.

A complete series of courses in library economy is given for the purpose of training high school and college graduates for positions as library assistants. A

circular stating the requirements for students in this series will be mailed upon request. See also pp. 71, 72.

Many courses are offered which aid a student to prepare for the Schools of Business, Law, and Medicine or to complete his preparation for Columbia College. See pp. 10, 11.

A two-year course in practical optics is offered in cooperation with the Department of Physics for the special training of those who desire to become optometrists. A special circular will be mailed upon request.

Courses are offered in agriculture for those who desire special work in that subject.

Under the Extension Teaching Department are offered also a number of classes in dentistry. These include graduate courses for practitioners, intended for graduates of reputable dental institutions. They are given at 35-37 West Thirty-ninth Street. In addition, classes in oral hygiene for licensed dental hygienists, designed to train women for the practice of operative dental hygiene, are offered at the Vanderbilt Clinic, Fifty-ninth Street and Tenth Avenue; also at 35 West Thirty-ninth Street.

A large number of other courses in varied subjects is given late in the afternoon and on Saturday which repeat those in liberal studies offered in the Schools of the University. These are given in the same manner and often by the same instructors as the regular courses. In most instances university credit is granted.

Courses covering the first two years of collegiate study and supplying the pre-medical years of the Long Island College Hospital are given at that institution. See special circular.

Numerous classes are given at various centers. These are either regular courses of collegiate grade or short lecture courses without academic credit.

Lecture-study courses in certain subjects forming fifteen or thirty lectures alternating with quiz or conference hours are given at Morningside Heights and at centers when requested.

Centers for the study of choral music are maintained at Morningside Heights and Brooklyn and large choral concerts are given during the year.

The Department of Extension Teaching maintains also the Institute of Arts and Sciences, described on p. 15.

A series of Home Study Courses has been instituted by the Department of Extension Teaching, to begin in September, 1919. See pp. 15, 16.

**Registration.** Registration in the Winter Session begins September 17, 1919; in the Spring Session, January 29, 1920. The office of the Registrar is in University Hall, East Corridor. It is open regularly from 9 a. m. to 5 p. m., and on and after October 6, from 7 to 9 p. m., but from September 17 to October 3, 1919, and from January 29 to February 13, 1920, the office will be open in the evening from 7 until 9:30. It is open from 9 a. m. to 1 p. m. on the first five Saturdays of each Session, thereafter from 9 a. m. to 12 m.

Students are permitted to attend any course once before registering. Thereafter they are required to come to the Registrar's office in person and file a registration blank giving such information as may be required for the University records and a statement of the courses they intend to pursue. Under the Statutes of the University the payment of fees constitutes part of registration. Accord-



ingly, students should come prepared to pay the stated fees for the courses for which they desire to register.

Students who take courses in the Winter Session and who desire to continue those courses in the Spring Session, or to add others, are expected to renew their registration in person at the beginning of the Spring Session, February 4, and to have their programs approved by advisers in the office of the Director; such renewal must be completed, including payment of fees, by February 11; after that date, renewal or payment of fees for such students constitutes late registration and may be accepted only upon the payment of the statutory fee of \$5.00 therefor. Absences will be counted against the student from the first day of the Session. Students registering for the first time after February 11 are not subject to a late registration fee, except when payment of fees is not completed within a week after the initial registration.

Students taking courses at a local center will register at that center in accordance with instructions given in the circulars describing the courses.

When students report at the office of the Registrar not later than October 4 for the Winter Session and not later than February 14 for the Spring Session that they have discontinued any or all courses for which they were duly registered, the tuition fees are returned; when they report after that date no rebate or credit is allowed. In the case of new students who register for the first time after September 27 and February 7, respectively, one week from the date of registration is allowed for such report. Occasional exceptions to this rule may be made in cases where it is unmistakably best for a student to change from one course to another; such changes must be for sound educational reasons and must be approved in writing by the Director, or some one in authority in his office.

After October 4 or February 14, respectively, students who are obliged to withdraw entirely from the University because of serious personal illness, and only such, may be allowed a partial rebate of their tuition fees. In considering such applications, the student will ordinarily be charged ten per cent. of the total tuition fee for each week of the Session up to the date his written notice of withdrawal is received by the Registrar.

**Fees.** Unless otherwise directed, students will pay all fees at the office of the Bursar, West Corridor, University Hall. Checks should be drawn to the order of Columbia University and presented in person or forwarded by mail to the office of the Bursar. This office is open daily from 9:30 a. m. to 3:30 p. m.; Saturday, from September 17 to October 18, and January 29 to February 28, respectively, from 9:30 a. m. to 1 p. m., thereafter from 9:30 a. m. to 12 m. It will also be open every evening from 7 to 9:30 (except Saturday) from September 17 to October 3, 1919, but from October 6 to October 31, from 7 to 9, on Monday and Friday evenings only. It will be open every evening (except Saturday) from 7 to 9:30 from January 29 to February 13, 1920, but from February 16 to February 27, from 7 to 9, on Monday and Friday evenings only.

University fee, for students in Extension Teaching exclusively, for each year or any part thereof, \$5.

Tuition fee: the fee for each Session as announced in the description of the course.

The University statutes provide that tuition fees, the University fee, and laboratory deposits are payable in advance. Registration will not be complete



until such fees are paid. Payment of fees after the last day of registration. Winter Session, October 4, 1919, Spring Session, February 11, 1920, imposes automatically the statutory charge of \$5.00 for the privilege. (See Registration, pp. 2, 3.) Under the regulations, the privileges of the University are not available to any student until he has completed his registration.

The fees to be paid by students are subject to change at any time at the discretion of the Trustees.

Students in courses in local centers will pay either the fee arranged by the local center or the usual fees described above. They will pay fees to the treasurer of the local center unless otherwise directed. Extension Teaching students taking courses in local centers who desire to receive credit for their work must fulfil all the requirements of matriculation in the appropriate part of the University.

**Admission.** The classes in Extension Teaching were originally planned for mature students, whose chief interest lay outside the University, and who had leisure to pursue only a few collegiate courses in the late afternoon or at night. For such students no entrance examinations are exacted. The sole condition is that these students show that they are qualified to pursue the work with profit. All courses are open, unless otherwise stated, both to men and women. Students, however, who desire to devote most of their time to study, are subject to definite restrictions, such, *e. g.*, as:

1. They must be at least eighteen years of age.
2. They may be required to possess a high school education or its equivalent.
3. They are required to elect approved programs, aggregating as many points as is judged wise by the advisers. The minimum program is usually twelve points. In arranging their programs, students will be expected to select correlated subjects leading to some definite end. All students under twenty-four years of age must have their programs approved in the office of Extension Teaching before registration. These students must attend their classes regularly and maintain the standing of credit students of the University.
4. When students under twenty-four years of age are not living with their parents or relatives in New York or vicinity, they will be required to live either in the dormitories or in residences specially approved by the Department.

5. Students who come from other universities or colleges without diplomas or certificates, must file statements certifying to their honorable dismissal.

With students who intend to begin or resume regular attendance under any faculty of the University, the question of academic credit for Extension Teaching courses should in every case be considered and approved by the designated representative of the Committee on University Admissions. Proper blanks may be obtained in the office of Extension Teaching.

The admission and continuance upon the rolls are subject to the full disciplinary power of the University authorities as prescribed by the statutes of the University.

A matriculated student is expected to conform to the rules for registration of the college or school of which he is a member. Students who expect later to apply for credit must secure approval of their schedules before registration. Record of attendance will date for matriculated students from September 25, 1919, and February 4, 1920.

Matriculated students in the various schools of the University will be allowed to attend courses in Extension Teaching in accordance with the regulations of the several schools; they must, however, register and pay the fees in the same way as other students in Extension courses.

No changes of program will be permitted beyond the second Saturday after the opening of the Session, except by special permission of the Director.

**Office.** The office of Extension Teaching is Room 301 University Hall. Full information as to this Department may be obtained at this office, which is open from 9 a. m. to 5 p. m., daily, Saturday 9 a. m. to 1 p. m. The office will be open every evening, except Saturday, from 7:30 to 9:30 p. m., from September 17 to October 3, 1919, and from January 29 to February 13, 1920; also every Thursday from 7:30 to 9:30 p. m., throughout the Winter and Spring Session. When the office is not open, students are referred to the office of the Registrar, Room 315 University Hall.

**Privileges.** Students taking six points each Session have the privileges of the Library and, in the case of men, the University Gymnasium. Under certain conditions depending upon the amount of work taken, women students in Extension Teaching may reside in Furnald Hall; men students in Hartley Hall or Livingston Hall. (See Residence Halls, below.)

Attention is called to the restaurant service at the University Commons maintained for the use of students where a dining-room for men and women is located.

Rest rooms for women students are located on the first floor of Philosophy Hall at the left of the entrance, and in Room 709 Journalism Building, open in the morning and afternoon. A coat room in the basement of Journalism is provided for the use of students.

### Residence Halls

#### *Hartley and Livingston*

Concerning these University residences for men full information may be obtained by applying to the Superintendent of Buildings and Grounds of Columbia University. The privilege of residence in these dormitories is limited, for men in Extension Teaching, to students in good standing, pursuing programs aggregating not less than eight points each Session and maintaining consistently passing grades in all subjects.

#### *Furnald*

This University dormitory will be assigned to the use of women students in the academic year 1919-1920. The privilege of residence is limited for women in Extension Teaching to students in good standing, pursuing programs of work approved by the Director, aggregating not less than twelve points each Session. Detailed information in regard to rooms and rates in Furnald Hall may be obtained by applying to the office of the Superintendent of Buildings and Grounds. All applications for reservations should be made before September 1.

#### *Residence Outside the Halls*

Detailed information and advice concerning desirable rooms and boarding places for both men and women may be obtained by writing to Mrs. A. S. Kervan, Room and Board Directory, Teachers College.

All women students under twenty-four years of age who are not living at home, are required to live in a dormitory, or to obtain permission to do otherwise from the Adviser of Women in Extension Teaching, Professor Katharine C. Reiley. Such students will not be allowed to complete their registration until their proposed living arrangements have been approved by this officer, whose signature must be obtained. In general, younger women students are not expected to take rooms in places where no reception room is provided for their guests. Students may confer with the Adviser on any afternoon, except Saturday, between 2 and 4, in Room 301 University Hall, or if necessary by special appointment. *All women students are requested to consult with the Adviser of Women before engaging rooms offered by unauthorized persons.*

**Location.** Intramural collegiate and professional courses will be given at Columbia University. Extramural courses will be given at the Long Island College Hospital, corner of Henry and Amity Streets, Brooklyn, at Bridgeport, Scranton, Trenton, and Yonkers, and at centers where there may be sufficient demand.

Classes will also be conducted at the New York Chapter of the American Institute of Banking, 138 East Thirty-fifth Street.

The most convenient means of access to the University are the Subway (Broadway Branch) to 116th Street, Columbia University Station, the Sixth or Ninth Avenue Elevated to 110th Street Station, and Broadway or Amsterdam Avenue surface lines.

**Calendar and Hours.** Columbia University opens on September 24 and Extension courses begin Thursday, September 25. The academic calendar calls for thirty weeks of actual class work. The examination period for the Winter Session begins January 26. The Spring Session will open February 4, and the Extension classes will begin on that date. The examination period for the Spring Session begins May 24. The examinations are given in the hours usually assigned to recitation and lectures. The calendar for Extension Teaching is the academic calendar of the University, except in regard to examinations. There will be no classes in Extension Teaching on the following days: Election Day, November 4; Thanksgiving Day and the two days following (November 27, 28, and 29); December 22 to January 3, inclusive; February 23; April 1 to 5, inclusive; May 31. There will be classes on February 12. See pp. 134, 135.

Extension courses are usually given in the afternoon after three o'clock, in the evening of every week day and on Saturday morning.

**Absences.** It is a student's duty to attend punctually each class or laboratory exercise in each course. For credit toward a degree or for a certificate of proficiency, attendance at nine-tenths of the sessions is required in addition to the proficiency attested by class work and examination. Absences are counted from the first meeting of the class in each Session.

A student may be absent without penalty in a Session as follows: from a course meeting once weekly, twice; from a course meeting twice weekly, three times; from a course meeting three times weekly, four times; from a course meeting four times weekly, five times; from a course meeting five times weekly, six times.



In case this limit is exceeded, a student receiving a grade of C or higher may submit a statement showing the cause of each absence. If, in the judgment of the Administrative Board, these causes were imperative, full or partial credit for the course may be assigned by the Director upon the recommendation of the Administrative Board, in accordance with the extent and reason of the student's absences and the standing attained in the course.

For discontinuance of attendance or cancellation of registration, students under twenty-four years of age must obtain permission in the office of Extension Teaching. Tardiness counts as half an absence.

**Examinations.** Two examinations are regularly held, one at the close of the Winter Session, and the second on the termination of the course. The examinations are given in the hours usually assigned to recitations and lectures. A mid-term report is sent to the Registrar by the various instructors, approximately on November 15 and March 25. For examination at special times, the fee is \$5 for each course.

Students who fulfil the conditions of registration, attendance, and accomplishment of work prescribed, together with the payment in full of the fee for the course, will receive a report of standing from the Registrar within three weeks after the close of each Session.

The student's performance in a course is reported according to the following grades: A, excellent; B, good; C, fair; D, poor (not passing); F, total failure. In graduate courses, P indicates passed; F, failure. H indicates a record of satisfactory attendance only.

**The University Press Book Store.** The University Press Book Store, situated in the Journalism Building, supplies students and officers with text-books and other needed material at stated discounts from list prices. These discounts are fixed by the Trustees of the Columbia University Press. The store will be open daily from 8 a. m. to 6 p. m.; Saturday from 8 a. m. to 5 p. m. It will also be open in the evening from September 24 to October 30, and from February 4 to February 28, until 9 p. m.

**Architecture.** In regard to courses leading to the Certificate of Proficiency, see special bulletin.

**Business.** Columbia University, through its Extension Teaching Department, offers evening courses in business, including a complete series of classes for students planning to take the state examinations for certified public accountant.

The object of these courses is to give a thorough training for those who desire to enter upon a business career immediately after leaving high school, and also to provide for persons already engaged during the day, instruction at night in the principles of business, commerce, and finance.

At the close of each Session students will receive from the Registrar a report of standing, and those who have completed the course in a manner satisfactory to the Administrative Board will receive a certificate signed by the Director of Extension Teaching. In order to be eligible for a certificate covering the entire course a student must secure 48 points, and must possess, preferably before entering, a high school education covering four years, or approximately 72 Regents counts, as described in detail in a special circular mailed upon request.



The fee for this certificate will be \$25 for those entering in September, 1919, and thereafter.

April 15, Thursday, is the last day for filing applications for the certificate in Business.

*Schedule of Classes for Professional Training in Business and Accounting;<sup>1</sup>*

FIRST YEAR

<i>Winter Session</i>	<i>Spring Session</i>
Business e23	Business e24
Business e73	Business e74
Business e7	Business e8
Economics e1a, or	Economics e2a, or
Business e9	Business e10

SECOND YEAR

<i>Winter Session</i>	<i>Spring Session</i>
Business e25	Business e26
Business e27	Business e28
Business e75	Business e76
Business e45	Business e46

THIRD YEAR

<i>Winter Session</i>	<i>Spring Session</i>
Business e129	Business e130
Business e131	Business e132
Business e133	Business e134
Business e189	Business e190
Elective (2 points)	Elective (2 points)

*List of Electives*

- Business e135, Office Management
- Business e136, Analysis of Financial Reports
- Business e137-138, Public Utility Accounting
- Business e171-172, The Principles and Practices of Factory Management
- Business e117, Psychology of Advertising and Selling
- Business e47-48, Investment Finance
- Business e57-58, Business Statistics
- Business e62, Business Mathematics
- Business e77, Life Insurance
- Business e78, Casualty Insurance
- Business e81, Fire Insurance
- Business e82, Marine Insurance
- Business e167, Railway Traffic and Rates

**School of Business.** Graduates of high schools, who have satisfactorily completed in the Department of Extension Teaching work equivalent to that offered by Columbia College or Barnard College in the first two years, will be

<sup>1</sup> The Certificate in Business is granted upon the satisfactory completion of the 48 points required in this schedule, provided a student before entering has completed a four-year high-school course or its equivalent.

admitted to the School of Business. The degree of B.S. in Business is conferred upon the completion of the course in the School of Business. Those who desire to complete in Extension Teaching the two preliminary years of collegiate work, should follow the program suggested below, completing 64 points, including English eA1-A2, eB1-B2; two years of French or Spanish or German; Philosophy eA1-A2; History eA1-A2; Economics e1-2; Business e9-10; Mathematics eA1 and eA3; and 15 points in electives.

**The Accounting Club.** The students of the night courses in accounting maintain an Accounting Club, among whose purposes are promotion of the welfare and interests of the students in accounting, the building up of a Club Reference Library and Business Laboratory, the presentation before the Club of lectures by leading professional and business men, and the keeping in touch with students after they leave the University with a view to following and promoting their progress. Ordinarily, any student who has secured two points credit in a course in accounting is eligible for membership.

**College Course.** Students who are unable for financial reasons to enter college upon graduation from a secondary school, may profitably continue their training through Extension Teaching classes while employed during the daytime, with the expectation of being later admitted to Columbia College with advanced standing as candidates for the degree of Bachelor of Arts.

### *Arrangement of Collegiate Subjects*

Students in Extension Teaching should regard as of first importance the selecting of subjects of study which are immediately of value to them and not undertake their work with the primary object of obtaining academic recognition. They will be assisted in selecting their subjects of study in the office of the Director, Room 301 University Hall.

The following arrangement of courses is given here as an aid in the grouping of subjects and not as indicating any convenient route to a degree.

#### FIRST YEAR

##### *College Points*

English eA1-A2 . . . . .	6
Modern language . . . . .	6
Mathematics . . . . .	4
	—
	16

#### THIRD YEAR

##### *College Points*

Philosophy . . . . .	4
History eA1-A2 . . . . .	6
English e17-18 . . . . .	4
Modern language . . . . .	2
	—
	16

#### SECOND YEAR

##### *College Points*

English eB1-B2 . . . . .	4
Philosophy eA1-A2 . . . . .	6
Modern language . . . . .	6
	—
	16

#### FOURTH YEAR

##### *College Points*

English e23-24 . . . . .	4
Zoology e1a-2a . . . . .	4
Economics e1-2 . . . . .	6
Government e1-2 . . . . .	6
	—
	20

## FIFTH YEAR

	<i>College Points</i>
Modern language . . . . .	6
History . . . . .	6
Science . . . . .	8
	—
	20
Total . . . . .	88

**College Entrance Course.** Mature students who are unable to attend a secondary school and other persons engaged in business throughout the day may prepare themselves for college by pursuing courses in Extension Teaching. These courses are not open to immature students nor to any who should be in high school or a preparatory school. The following schedule is suggested for those who desire a complete training in subjects required for college entrance. Students may elect the complete course or only such classes as they may need.

In order to count any course in Extension Teaching toward admission, candidates must, before beginning the course, secure written permission from Professor A. L. Jones, Director of Admissions, Room 321 University Hall; except candidates for admission to Barnard College, who must secure written permission from the Dean of Barnard College.<sup>1</sup>

Persons of unusual ability may complete the entire schedule given below in less than four years; this is true especially of those who may be able to attend in the late afternoons as well as at night.

<i>First Year</i>	<i>Third Year</i>
English eW1-W2	English eY1-Y2
One elementary language	History eX1-X2
Mathematics eX3, eX6	Physics eA1-A2
<i>Second Year</i>	<i>Fourth Year</i>
English eX1-X2	Chemistry eA1
Intermediate language	Mathematics eA1, A2
Mathematics eY1	Elective subjects

A complete list of courses given in Extension Teaching that may be offered for entrance credit follows:

Botany e1-2, for botany  
 Chemistry eA1 or eA2, for chemistry  
 Drawing eW1 or eW2, for drawing  
 English eW1-W2 and eX1-X2 for English 1  
 English eY1-Y2, for English 2  
 French eA1-A2, for elementary French  
 French eB1, for intermediate French  
 French eB2, for advanced French

<sup>1</sup> While work done in University Extension Teaching courses is not primarily accepted in lieu of entrance examinations to Barnard College, entrance conditions may be removed by a grade of at least C, subsequently obtained in the appropriate Extension courses. In exceptional cases, for reasons of weight, the Dean may grant permission to a student to count an Extension course for entrance credit, without her having taken an entrance examination in the subject.

Geography e25-26, for physical geography  
 German eA1-A2, for elementary German  
 German eB1, for intermediate German  
 German eB2, for advanced German  
 Greek e1-2, for Greek *a*, *b*, and *g*  
 History eX1 or eX2, for History *d*  
 History eX3 or eX4, for History *a*  
 Italian e1-2 for elementary Italian  
 Latin eX1-X2 or eX8 and eX3, for second-year Latin.  
 Latin eY1 or eY8, for Vergil  
 Latin eY3 or eY4, for third-year Latin  
 Latin eY5 or eY6, for advanced Latin prose composition  
 Mathematics eX1 or eX2 or eX3, eX6, for elementary algebra  
 Mathematics eX1 or eX2 or eX5 or eX6 for algebra, quadratics and beyond  
 Mathematics eY1 or eY2, for plane geometry  
 Mathematics eA1, eA3, e1 (any two), for advanced mathematics  
 Physics eA1-A2, for elementary physics  
 Spanish eA1-A2, for elementary Spanish  
 Spanish eB1, for intermediate Spanish  
 Zoology e1a-2a, for zoology

**Engineering Courses.** In taking classes in engineering and allied subjects in Extension Teaching a student may adopt one of two methods in arranging his studies. (1) He may select only the class or classes in which he is especially interested, and which will be of most immediate assistance to him in his present work. In every case he must be careful that he possess all the prerequisites for each course which he proposes to pursue. Extension Teaching offers many classes of this nature, planned especially for mature students already engaged in engineering work and at liberty to devote only a few evenings a week to professional study. Such courses do not in themselves lead to any degree, though some of them bear credit applicable to degrees, when other conditions have been fulfilled, as stated below. (2) The student may plan his work in such a way that when supplemented by day attendance, after having completed satisfactorily the entrance requirements, it will lead ultimately to a degree in engineering. No degree is given for work taken exclusively in the evening.

A student desiring to matriculate in the Schools of Mines, Engineering, and Chemistry is required to present, in addition to the regular four years of the preparatory school, at least three years of collegiate work.

Extension Teaching has provided a schedule whereby a student by studying in the evening can complete this collegiate preparation. He will then be allowed to enter the Schools of Mines, Engineering, and Chemistry, provided always that he has satisfied the requirements in regard to the work of the preparatory school. The collegiate course, outlined below, is that recommended by the Faculty of Applied Science in Columbia University. It presupposes a full four-year high-school course, including, among other subjects, intermediate algebra, solid geometry, trigonometry, physics, chemistry, four years of English, and three years of a modern language.

In order to avoid conflicts the subjects should generally be taken in the order suggested, though in many cases the program will necessarily be rearranged to



suit the needs of the individual student. All persons thinking of pursuing this course are urged to confer with the officers of Extension Teaching in Room 301, University Hall. A few subjects in the third, fourth, and fifth years are not given at present in Extension Teaching, but they will be added as the need arises.

FIRST YEAR			
<i>Winter Session</i>		<i>Spring Session</i>	
English eA1 . . . . .	3	English eA2 . . . . .	3
Mathematics e1 . . . . .	3	Mathematics e4 . . . . .	3
Physical Education eA1 . . . . .	2	Physical Education eA2 . . . . .	2
History eA1 . . . . .	3	History eA2 . . . . .	3
<hr/>		<hr/>	
11		11	
SECOND YEAR			
Mathematics e55 . . . . .	3	Mathematics e56 . . . . .	3
Philosophy eA1 . . . . .	3	Philosophy eA2 . . . . .	3
English e17 . . . . .	2	English e18 . . . . .	2
English eB1 . . . . .	2	English eB2 . . . . .	2
Economics e1 . . . . .	3	Economics e2 . . . . .	3
<hr/>		<hr/>	
13		13	
THIRD YEAR			
Chemistry e3 . . . . .	5	Chemistry e4 . . . . .	5
French eB5 or German eE1 . . . . .	3	French e4a or German eE2 . . . . .	3
Mathematics e57 . . . . .	3	Mathematics e22 . . . . .	3
<hr/>		<hr/>	
11		11	
FOURTH YEAR			
Chemistry e11 . . . . .	5	Chemistry e12 . . . . .	5
Mechanics e1 . . . . .	2	Physics e6 . . . . .	6
Elective . . . . .	2	<hr/>	
<hr/>		11	
9			
FIFTH YEAR			
Mechanical Drawing e1 . . . . .	2	Mechanical Drawing e2 . . . . .	2
Mechanical Drawing e3 . . . . .	2	Mechanical Drawing e4 . . . . .	2
Physics e7 . . . . .	7½	Physics e8 . . . . .	7½
Physics e49 . . . . .	1½	Physics e50 . . . . .	1½
<hr/>		<hr/>	
13		13	
		Electives . . . . .	8
		Total . . . . .	124

Students desiring to secure a baccalaureate degree in addition to the professional degree should plan to take the last year of the above course in Columbia College.

A scholarship, affording free tuition in the graduate courses of the Schools of Mines, Engineering, and Chemistry will be given each year to the student who completes the above outlined evening course with the highest record.

**Law.** In order to secure the degree of Bachelor of Laws from Columbia University, a student must present 94 points of collegiate study before entering the

course. Students planning at some future time to study law are, therefore, advised to complete the collegiate work outlined on pp. 9, 10, which, when supplemented by one course of six points, will answer the entrance requirements provided the student has also satisfactorily completed the 15 units of high-school studies required for entrance to college.

**Medicine.** In order to enter the College of Physicians and Surgeons in Columbia University, students must present two years of collegiate study, amounting to at least 72 points in addition to the regular high-school preparation.

This work must include one year of physics, one year of inorganic chemistry based on college entrance chemistry, one-half year of qualitative analysis, one-half year of organic chemistry, one year of biology, two years of college English, and the equivalent in either French or German of Courses A and B as prescribed by Columbia College. Students should obtain the current announcement of the College of Physicians and Surgeons where these requirements are stated in full.

Students intending later to study medicine may complete the evening collegiate course outlined on pp. 9, 10, which will answer the collegiate requirements for admission. It is necessary, however, that they include advanced courses in chemistry (two years consisting of general inorganic, qualitative, and organic), physics, zoology (one full year each), English, two years, and French or German at least one year beyond the elementary requirement.

**Premedical course at the Long Island College Hospital.** Columbia University offers a two-year course of collegiate training at The Long Island College Hospital, Amity and Henry Streets, Brooklyn, N. Y., for students who intend to enter that institution. This course of two years will be useful to students who desire to enter other medical schools. (See special circular.)

**Optics.** A two-year technical course in practical optics, leading to a certificate issued by the University, is given by Extension Teaching. The required classes in each year are mentioned in the outline given below. A special circular describing this series and giving full information concerning the entrance requirements may be obtained from the Secretary of the University. Two scholarships covering all tuition fees in practical optics are awarded annually by the American Optical Company of Southbridge, Massachusetts.

#### FIRST YEAR

- Optometry A1 Algebra, geometry and trigonometry (Review)
- Physics A1-A2 General elementary physics
- Optometry 1-2 Theoretical optics
- Optometry 3-4 General anatomy with special reference to the anatomy and physiology of the eye
- Optometry 6 Practical optics
- Optometry 8 Theoretical optometry

#### SECOND YEAR

- Optometry 9-10 Theoretical optics
- Optometry 11-12 Physiological optics
- Optometry 13-14 Practical optics
- Optometry 15-16 Theoretical optometry
- Optometry 17-18 Pathological conditions of the eye
- Optometry 19-20 Practical optometry

### Secretarial Studies

The Department of Extension Teaching has provided two series of courses for students in secretarial studies.

The object of these courses is properly to equip students who desire to become private secretaries or to hold important positions in offices as assistants to public officials or to persons engaged in professional pursuits.

#### *One-Year Course for College Graduates*

Graduates of approved colleges who have been accepted as candidates for a certificate are required to complete during the year the following courses:

Stenography e1-2 and Typewriting e1-2, for which academic credit of 8 points will be allowed.

They are also required to select from the courses in business offered by the School of Business or Extension Teaching electives amounting to 14 points. Among the electives recommended are the following:

Secretarial bookkeeping, Bookkeeping e1-2  
 Elements of accounting, Business 23-24  
 Business organization and administration, Business 7-8  
 Principles of banking, Business 51  
 Business law, Business 71-72  
 Secretarial correspondence, Secretarial correspondence e1-2  
 Typography, Typography e1  
 Public aspects of business, Business 3-4  
 Contracts, Business e73-74  
 Corporate finance, Business 45  
 Economic history of the United States, Business 89-90  
 Economic geography of Europe, Business 87  
 Speaking and writing French, Commercial French b93-94  
 Speaking and writing Spanish, Commercial Spanish b95-96  
 Practical advertising, Business e15  
 Advanced advertising, Business e16  
 Latin-American commercial law, Business e85-86  
 Economic doctrines and social reform, Economics b101-102

The fee for this certificate is \$25.

#### *Two-Year Course for High School Graduates*

Graduates of approved high schools, fulfilling the requirements for admission as stated in the pamphlet entitled "Secretarial Studies," will be admitted as candidates for a certificate in Extension Teaching. The complete series will demand two years, although this time may be shortened by attendance at Summer Sessions. Students may use the late afternoon and evening classes in Extension Teaching.



*Courses leading to a Certificate in Secretarial Studies:*

	<i>Points</i>
Stenography e1-2, Typewriting e1-2, counted as . . . . .	8
English eA1-A2 . . . . .	6
Modern languages . . . . .	12
Secretarial correspondence e1-2 or Business English e1-2 . . . . .	6
Business e7-8 (Business Administration) . . . . .	4
Secretarial Bookkeeping . . . . .	4
Typography . . . . .	2
Elective . . . . .	6
	<hr/>
Total . . . . .	48

The fee for the certificate for students entering September, 1919, is \$25.

Students may secure the degree of B.S. in Business by pursuing secretarial studies in the School of Business. See special announcement.

April 15, Thursday, is the last day for filing applications for the professional certificate in Secretarial Studies.

**The Institute of Arts and Sciences.** The Institute of Arts and Sciences, established by action of the Trustees of Columbia University on February 3, 1913, is a division of the Department of Extension Teaching. The aim of the Institute is to provide a popular late afternoon and evening program consisting of general lectures and events of a cultural nature.

The program is planned for busy men and women. Its scope includes single lectures and short series of lectures, or not over six, on history, literature, art, music, geography, science, and on current economic and social problems; it comprises also illustrated travel lectures, recitals, dramatic readings, and vocal and instrumental as well as chamber music concerts.

The program is subscribed for as a whole. The annual dues are \$10, payable in advance, with an enrolment fee of \$5 payable only once provided the enrolment does not lapse.

A member of the Institute is entitled to free admission for himself and one other person to all the lectures and other events on the regular evening program, but in the afternoon only one person is admitted on the ticket. The ticket is transferable. Altogether the membership ticket includes free admission to approximately 250 lectures, readings, concerts, recitals, etc., throughout the season. The program continues from October to April.

The University auditoriums are used. Memberships are accepted at any time and are good for one calendar year from the first of the month nearest the time of enrolment.

A special pamphlet describing in detail the program of the Institute will be mailed upon request.

### Home Study Courses

Beginning in September, 1919, Columbia University, through the Department of Extension Teaching, will offer Home Study courses for persons who are unable to attend classes conducted at the University. There are many individuals who, for reasons known only to themselves, are compelled to postpone their academic work and who are very reluctant to drop it completely. According to the University's policy of providing a liberal education for all who desire it, these courses



have been instituted for the benefit of those who wish, even in this limited and restricted manner, to engage in advanced study. (See special circular.)

The University, although it does not require previous academic work for admission to Home Study courses, asks each prospective registrant to give satisfactory indications that he or she can pursue further study to the mutual advantage of the University and the student, and prospective students are urged to enrol only in those courses for which previous study and training has prepared them, and from which they may derive the greatest amount of pleasure and profit.

Home Study courses have no reference to academic credit or degrees. Upon satisfactory completion of the work prescribed by the instructor, a certificate stating that definite work has been completed will be given by the Registrar of the University.

Enrolment in the Home Study courses may begin at any time, but the Department reserves the right to limit the number or length of courses for which any one individual may enrol.

All courses cover the same ground as those given to resident students, but Home Study is outlined and administered in a way that will enable mature non-resident students to take advantage of their wide experience which in the case of resident students is compensated for by more intensive reading. All instructors are members of the staff of one of the departments of the University and all work is outlined by them and carried out under their supervision and direction.

### Degrees

**Regulations Governing Credit toward the Degrees of A.B. in Columbia College and Barnard College and B.S. in Teachers College.** Students of Columbia College, Barnard College, and Teachers College will be allowed to attend Extension courses which are approved by the Committees on Instruction and will be allowed to count them toward the degrees of A.B. and B.S. under the following regulations:

1. The election of Extension courses must be approved in advance by the Committees on Instruction.
2. Students will not be allowed to exceed a total of 16 hours in Barnard College, or 16 hours in Teachers College including the hours of Extension courses, save for reasons of weight and by the special permission of the Committees on Instruction.
3. Students desiring these courses to count toward the degrees of A.B. and B.S. must obtain at least a grade of C.
4. Matriculated students electing Extension courses after having obtained the approval of the Committees on Instruction must register for these courses at the office of the Registrar and pay the fees required for such courses. Teachers College students taking Extension courses must register for such work at the Registrar's office of Teachers College and pay the fees therefor in Teachers College.
5. No degree is given for undergraduate courses taken exclusively in Extension Teaching.

All students who intend to apply for advanced credit in Columbia College for work done in Extension Teaching should have the authorization of the Office of Admissions.

In order to obtain such authorization the student should submit his complete previous record. This data should be supplied at the earliest possible moment.

Students who desire credit in Barnard College must make all their arrangements through the Dean of Barnard College.

**For the Degrees of Master of Arts and Doctor of Philosophy under the Faculties of Political Science, Philosophy, and Pure Science.** The courses in Extension Teaching which have been approved by the Faculties of Political Science, Philosophy, and Pure Science and by the Executive Committee of the University Council may be counted toward the fulfilment of the residence requirements for the degrees of Master of Arts and Doctor of Philosophy. These courses are numbered 100 and above and marked Credit II.

The Announcement of the Faculties of Political Science, Philosophy, and Pure Science, which will be sent upon application to the Secretary of the University, contains full information with regard to fellowships, scholarships, prizes, student employment, appointments, University and tuition fees, and all other University matters of interest to advanced students. It contains also a statement of the University requirements for the degrees of Master of Arts and Doctor of Philosophy and should be consulted by every candidate for those degrees.

**For the Degree of Master of Science.** The degree of Master of Science is awarded as a graduate professional degree under the Faculty of Applied Science, the Faculty of Practical Arts, the School of Architecture, and the School of Business. For information with regard to candidacy for this degree application should be made to the Dean or Director of the Faculty or School concerned.

**Courses in Teachers College.** Teachers College in its School of Education offers to matriculated students a number of its regular courses at hours in the afternoons and on Saturday mornings which are convenient to teachers. These courses include the history and philosophy of education, educational administration, educational psychology, secondary education, elementary education, kindergarten education, and certain courses on the methods of teaching academic subjects. These courses are described in a special circular of *Afternoon, Evening, and Saturday Courses* which may be obtained from the Secretary of Teachers College.

Teachers College offers also in its School of Practical Arts, at similar hours and in the evenings, regular and special classes in foods and cookery, sewing and textiles, household administration, nursing and health, household chemistry, fine arts, music, physical education, wood-working, metal-working, drawing, designing, etc. The special classes in the practical arts for non-matriculated and Extension students are fully described on pp. 102 ff. of this bulletin and are open to all who are qualified to enter them.

**Relation of Extension Teaching to other University Work.** 1. The requirements for the degree of Master of Arts are stated in full in a bulletin entitled *Political Science, Philosophy, and Pure Science*, which will be sent upon application to the Secretary of the University. This bulletin should be consulted by all students electing graduate courses.

2. Students taking Extension courses who desire to become candidates for the degree of Bachelor of Arts or Bachelor of Science or for professional degrees in Science, Law, Medicine, Business, and Practical Arts, should make application to be received as such to the Director of Admissions, Room 321 University Hall. The requirements for admission to the University as a candidate for baccalaureate

degrees are set forth in the bulletin, *Entrance Examinations and Admissions, 1919-1920*, which may be obtained on application to the Secretary of the University.

3. Students taking Extension courses who desire to become candidates for a diploma in teaching or the degree of Bachelor of Science in Practical Arts should make application to be received as such to the Secretary of Teachers College. For full information in reference to the requirements for admission to the School of Education or the School of Practical Arts of Teachers College, apply to the Secretary of Teachers College.

4. Students using Extension courses for the purpose of securing entrance credits should consult Professor Adam Leroy Jones, Room 321 University Hall. For admission to Barnard College, students should consult the Dean of Barnard College before registering.

**Local Centers.** To facilitate the work of instruction away from the University, the Administrative Board may institute local centers. Local centers may be established wherever a local community or a local organization undertakes to offer, year by year, one or more of the Extension courses of the University. Local boards of education, teachers' associations, schools, societies, and clubs desirous of offering Extension courses may be constituted local centers. In general, however, a special local committee (president, secretary, treasurer, and five members, representing the particular community) is the usual organization of the local center.

Local centers are responsible, through the local committee, for the effective arrangement of Extension courses they offer. They determine the courses in cooperation with the Director; they enlist local interest; they provide, by fees or the sale of tickets or otherwise, for all the expenses of their work—the course fee, the cost of syllabi, the traveling expenses of the lecturer, lecture-hall, janitor, printing and advertising, and when lectures are to be illustrated they must provide the lantern and operator. The Administrative Board will establish and conduct local centers where suitable arrangements may be made and sufficient guarantees secured.

#### Enrolment

Year	Morningside	Extramural	Total
1910-11	922	390	1312
1911-12	1329	271	1600
1912-13	2016	296	2312
1913-14	2664	723	3387
1914-15	3407	754	4161
1915-16	3960	821	4781
1916-17	5328	680	6008
1917-18	5944	713	6657
1918-19	6213	536	6749

The attention of Extension Teaching students is called to the graduate, college, and professional courses given during the summer in the day and evening, from July 7 to August 15. Address the Secretary of the University.



## COURSES OF INSTRUCTION

**NOTE.** The University reserves to itself the right to withdraw or modify these courses as may seem wise.

Courses corresponding and equivalent to prescribed courses of Columbia College are designated by letters A, B. A<sub>1</sub>, B<sub>1</sub> refer to the Winter Session (September-January) in such a course; A<sub>2</sub>, B<sub>2</sub> to the Spring Session (February-May). In numbered courses, odd numbers designate the Winter Session, even numbers the Spring Session.

In the statement of each course the prerequisites are indicated except that the equivalent of the first half of a hyphenated course (e. g., Botany ei-2) is usually assumed to be a prerequisite for admission to the second half.

**Credits.** For courses numbered 100 to 299, inclusive, undergraduate credit will be determined by the various faculties under which the student intends to apply for such recognition. For entrance credits, see pp. 10, 11.

The question of credits for Barnard College, Columbia College, and College of Physicians and Surgeons must be determined finally on consultation with the appropriate Committee on Instruction.

Courses marked Credit I—May be counted toward the degrees of A.B. and B.S., in all parts of the University where these degrees are given, and toward appropriate diplomas in teaching. See p. 16. For other courses, which under certain conditions may be offered for credit by candidates for the A.B. or B.S. degree, see Credit II.

Courses marked Credit II—May be offered by graduate students toward the higher degrees. Open also to undergraduates on the approval of the appropriate Committee on Instruction obtained in advance.

Courses marked Credit III—Are open only to graduate students and may be offered toward the degrees of A.M. and Ph.D.

Courses marked Credit IV—May be counted for matriculated students in the School of Practical Arts toward the degree of B.S. See p. 102.

Courses marked Credit V—May be counted toward the appropriate degrees in the Schools of Mines, Engineering, and Chemistry, and Architecture.

Courses marked Credit IX—May be counted toward the degree of B.S. in Business.

Only courses thus designated will be counted toward degrees.

The fees and points as stated with the various courses are for each Session. In the case of non-credit courses, the number of points is published merely to give a general idea of the amount of work required of the student.

## AGRICULTURE

Columbia University, through the Extension Teaching Department, offers courses in agriculture. These courses may, with the approval of the Committee on Instruction, form part of the curriculum leading to the degree of A.B. for



students of Columbia College. They will also be open to students who desire to take only courses in agriculture with or without credit.

Students desiring to undertake courses in agriculture should consult before registering Professor O. S. Morgan; office hours 10-11 a. m., Wednesday, Thursday, and Friday, and at other hours by appointment. Room 511 Schermerhorn Hall. He will be glad to assist students in arranging their programs, and will outline classes in agriculture to cover the student's partial or complete time for one or more Sessions of study. Students who have special objects in view, such as preparing to become farm operators or specialists, should consult him about their programs. The courses have been prepared so as to be of practical assistance to those who desire to improve their farming venture, or who plan to buy a farm but need introductory courses.

**Agriculture e1-2—Introduction to agriculture.** Lectures and laboratory. Credit I, IV. 3 points each Session. Fee \$18 each Session. Professor O. S. MORGAN

Section 1—9:10-10:50 a. m., Saturday (lectures), Room 505 Schermerhorn; 11 a. m.-12:50 p. m., Saturday (laboratory), Room 502 Schermerhorn

Section 2—7:20-9 p. m., Wednesday (lectures), Room 505 Schermerhorn; 11 a. m.-12:50 p. m., Saturday (laboratory), Room 502 Schermerhorn (Section 2 is offered in the Winter Session only)

The object of this course is to give the student entering the study of agriculture a clear understanding of the main problem and principles of present-day scientific agriculture, particularly as practised in the eastern United States. All students undertaking the study of agriculture for the first time should take at least the Winter Session of this course.

Winter Session: The essentials of crop production as affecting the American cereal crops. Brief consideration will be given the following: crop rotation, fertilizers, manures, liming, varieties, cultural methods, food values, harvesting, storage, farm machinery, seed improvement, testing, and cost production, especially as relates to corn and wheat culture.

Spring Session: The production of small grains, hay, grass, legumes, potatoes, and roots. The management of hay fields, clovers, alfalfa, vetches, cow peas, cereals for hay; pastures, seeding and management: the production of root crops.

Laboratory work will include the study of the characteristics of farm crops, judging and scoring of corn and other grains, testing for germination and purity, reports on special topics, pot culture in the greenhouse, and excursions to industrial plants and farms.

**Agriculture e1a-2a—Lectures only.** 2 points each Session. Fee \$12 each Session. Professor O. S. MORGAN

Section 1—9:10-10:50 a. m., Saturday, Room 505 Schermerhorn

Section 2—7:20-9 p. m., Wednesday, Room 505 Schermerhorn (offered Winter Session only)

**Agriculture e3-4—Soils and fertilizers.** Lectures and laboratory. Credit I, IV. 3 points each Session. Fee \$18 each Session. Professor O. S. MORGAN

Section 1—2:10-3:50 p. m., Thursday (lectures), Room 505 Schermerhorn; Laboratory arranged at convenience of students, or 2:10-4 p. m., Friday, Room 505 Schermerhorn, and agricultural greenhouse

Section 2—7:20-9 p. m., Wednesday (lectures), Room 505 Schermerhorn. Laboratory arranged at convenience of students or on Thursday, 7:20 p. m., Room 505 Schermerhorn, and agricultural greenhouse. (Offered Spring Session only)

The object of this course is to give the novice as well as the practical farm operator a thorough going understanding of the basis of successful soil management for crop production. The Spring Session of this course should form a part of every "city" farmer's studies in technical agriculture. The laboratory work is essential.

Winter Session: Principal soil types: clearing, draining and fitting land; tillage and tillage practices; organic matter, muck-lands, green manure cropping; lime, liming and acid soils; hillside soil management. Excursions to well-equipped practical farms.

Spring Session: Fertilizers, manures, physical and chemical factors, soils and crop problems in agriculture from the standpoint of soil fertility and productivity; the supply in the form of manure, etc., and the practical economic consideration of maintaining and increasing the crop-producing power of lands. Renovation of run-down farms. Special plant studies on soils and fertilizers in the laboratory for soil analysis. Students are invited to bring soil from garden or farm for analysis. All students entering upon the study of Agriculture should take at least the Spring Session of this course.

**Agriculture e3a-4a—Lectures only.** 2 points each Session. Fee \$12 each Session. Professor O. S. MORGAN

Section 1—2:10-3:50 p. m., Thursday, Room 505 Schermerhorn

Section 2—7:20-9 p. m., Wednesday, Room 505 Schermerhorn (offered Spring Session only)

**Agriculture e5-6—Farm management.** Readings, conferences, and excursions. Credit I, IV. 3 points each Session. Professor O. S. MORGAN

3-5 p. m., Wednesday or by appointment, Room 511 Schermerhorn. Fee \$18 each Session

The object of the course is to afford an opportunity for farm owners or beginners in farming, to study special problems in farm management on individual farm projects, such as the different types of farming, size of farm, intensive *vs.* extensive farming, farm equipment, buildings, accounting, and the purchase and marketing problems. Recommended study time on reference about five hours a week.

### *Graduate Courses in Agriculture*

**Agriculture e101-102—Agronomy.** Credit III. 3 points each Session. 8 hours laboratory, or equivalent. Conference weekly. Report optional. Professor O. S. MORGAN

Hours to be arranged. Fee \$18 each Session

The course consists of a study of the principles underlying the production and management of cereal and forage crops, and farm management factors related thereto.

Advanced studies of pot, jar, and cylinder soils' work is laboratory option.

Prerequisite: Agriculture e1-2, e3-4, or their equivalent, and satisfactory preparation in botany and chemistry.

**Agriculture e211-212—Research in soil, management.** Fertilizers, soil amendments, soil toxins as related to plant production. Credit III. 3 points each Session. 8 hours laboratory. Conference weekly. Report required. Professor O. S. MORGAN

Fee \$18 each Session

The work consists of fertilizer and crop tests of soils that have been surveyed. Careful laboratory tests and studies are emphasized, as well as a thorough study of experiment station publications.

Prerequisites: Agriculture e1-2, e3-4, e101-102, or their equivalent.

**Agriculture eXa, b, c, d, e—Special short lecture courses in agriculture.** Fee, in full, for each course, \$10. No University fee.

Tentative schedule of short courses of sixteen lecture periods as planned for the current year in the following subjects:

eXa—Animal feeding

eXb—Dairying

eXc—Swine raising

eXd—Poultry raising

eXe—Farm machinery and tractors

The hours of these courses will not conflict with the hours of the regular courses in agriculture.

Each one of these courses will run through about a month, and will be held in the late afternoon and evening of a day or two days of each week of the course.

The first one of the series will not be offered until December, 1919, before which time a special circular announcement will be available for distribution to inquirers.

## ARCHITECTURE

The following afternoon and evening courses in architecture, offered in the year 1919-1920, are open to all qualified students without examination. They correspond, in part, to the work given in the School of Architecture, and equivalent courses will count toward the degree of Bachelor of Architecture for those who can present the required credentials for admission to the School of Architecture (see Announcement of the School of Architecture).

A recommended sequence of courses in architecture leading to the Certificate of Proficiency is given in a special bulletin which will be sent upon request. This program should be followed by students beginning the study of architecture, even though they are not candidates for the Certificate, since it presents a logical and orderly system of instruction.

For detailed information in regard to the Certificate course, see special bulletin.

For courses in mathematics and structural mechanics, see pp. 72-74 and 46, 47.

**Architecture e1—Elements of design: orders.** Credit V. 5 points Winter Session. Professor C. A. HARRIMAN

8-9:40 p. m., Tuesday and Friday. Room 408 Avery; Drafting in Room 504 Avery. Fee \$30

Mouldings, the orders, intercolumniation and superposition, balustrades, arcades, doors, windows, roofs, spires, vaults, domes.

**Architecture e2—Elements of design: applications of orders.** Credit V. 5 points Spring Session. Professor C. A. HARRIMAN

8-9:40 p. m., Tuesday and Friday. Fee \$30

Exercises in applications of elementary architectural forms as given in Course e1 and of shades and shadows as given in Course e5, both of which are prerequisite.

**Architecture e5—Shades and shadows.** Credit V. 4 points Winter Session. Mr. G. M. ALLEN

7-7:50 p. m., Monday, Wednesday, and Friday, Room 408 Avery; Drafting, 8-10:30 p. m., Wednesday, Room 601 Avery. Fee \$24

Accurate and rapid methods for determining the shades and shadows on architectural objects, quick methods of approximation, practical applications.



**Architecture e6—Descriptive geometry.** Credit V. 4 points Spring Session. Mr. G. M. ALLEN

7-7:50 p. m., Monday, Wednesday, and Friday. Fee \$24

Rapid and unique methods of solving problems relating to right lines and planes; phenomena of lines and surfaces; tangent planes; intersections and developments.

Will not be given for less than ten students.

**Architecture e6a—Shades and shadows.** Credit V. 4 points Spring Session. Mr. H. P. ZOLLER

7-7:50 p. m., Monday, Wednesday, and Friday. Drafting, 8-10:30 p. m., Wednesday. Fee \$24

Architecture e5 repeated in Spring Session.

Will not be given for less than ten students.

**Architecture e7—Perspective.** Credit V. 3 points Winter Session. Mr. G. M. ALLEN

8-8:50 p. m., Monday and Wednesday, Room 408 Avery; Drafting, 9-10:30 p. m., Wednesday, Room 601 Avery. Fee \$18

Brief, direct, and accurate methods; the office method, perspective plan method, approximations, the perspective of shadows, reflections, presentations of drawing, etc.

Will not be given for less than ten students.

**Architecture e8—Stereotomy.** Credit V. 2 points Spring Session. Mr. G. M. ALLEN

7-7:50 p. m., Tuesday. Drafting, 8-10:30 p. m., Wednesday. Fee \$12

Building stones, architectural stone coursing, architects' and contractors' drawings of stonework, practical problems in stone jointing, visits to stone-cutting plants; vaults and intersections of surfaces, developments.

**Architecture e8a—Perspective.** Credit V. 3 points Spring Session. Mr. G. M. ALLEN

8-8:50 p. m., Monday and Wednesday. Drafting, 9-10:30 p. m., Wednesday. Fee \$18

Architecture e7 repeated in the Spring Session.

**Architecture e11—Mechanical equipment of buildings.** Credit V. 3 points Winter Session. Mr. H. V. WALSH

9-9:50 p. m., Monday and Friday. Room 403 Avery. Fee \$18

The principles of sanitation, the methods of sewage disposal, and the design of a modern plumbing system in accordance with the New York City Building Code.

The different methods of heating and wiring buildings and the advantages and disadvantages of each; the regulations of the New York City Building Code, and of the National Board of Fire Underwriters; the preparation of working drawings for heating and wiring contracts.

Will not be given for less than ten students.

**Architecture e12—Specifications.** Credit V. 3 points Spring Session. Mr. H. V. WALSH

9-9:50 p. m., Monday and Friday. Fee \$18

An explanation of the general law of contracts; the different ways of preparing specifications for estimates, with the advantages and disadvantages of each; instructions to bidders; general clauses; rules to be observed in writing specifications and the different methods of arranging clauses.

Will not be given for less than ten students.



**Architecture e15-16—Building materials and construction.** Credit V. 3 points each Session. Mr. H. V. WALSH

8-8:50 p. m., Monday and Friday. Room 403 Avery. Fee \$18 each Session  
Properties and tests of building materials. Carpentry, slow-burning construction, steel and iron construction, masonry, fireproofing, reinforced concrete and their appearance in buildings.

**Architecture e17-18—Structural design.** Credit V. 3 points each Session. Mr. H. V. WALSH

7-7:50 p. m., Monday and Friday. Room 403 Avery. Fee \$18 each Session  
Steel construction. The design of beams, girders, and columns, and by graphical analysis of roof trusses, piers, arches, and retaining walls.

**[ Architecture e27—Ancient architecture.**

Will not be given in 1919-1920; will be offered in 1920-1921.]

**[ Architecture e28—Medieval architecture (to Gothic).**

Will not be given in 1919-1920; will be offered in 1920-1921.]

**Architecture e29—Medieval and Renaissance architecture (beginning with Gothic).** Credit I. 2 points Winter Session

Gothic architecture in France, England, Italy, Germany, Spain, The Netherlands; analytical and critical discussion of historic development, characteristics and chief examples, including the beginnings of the Renaissance as seen in Italy and France.

[ Will not be given in 1919-1920; will be offered in 1920-1921.]

**Architecture e30—Renaissance and modern architecture.** Credit I. 2 points Spring Session

The architecture of the Renaissance in Italy, France, Germany, Spain, the Low Countries, and England; architecture of the nineteenth century in Europe; American architecture; modern and contemporary developments and tendencies. Analytical and critical discussion of historical development and great examples of architecture since 1420.

[ Will not be given in 1919-1920; will be offered in 1920-1921.]

**Architecture e31-32—Ancient ornament.** Credit I, V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Friday. Room 407 Avery. Fee \$12 each Session

General classifications; origins, primitive and savage ornament; the historic ornament of Egypt, Assyria, Persia, Greece, and Rome, including Ægean, Cypriote, Phoenician, and Etruscan ornament; the development of the styles, the common motives and patterns of both architectural ornament and the minor arts. Periodic drawings.

**Architecture e33-34—Medieval ornament.** Credit I, V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Monday. Room 407 Avery. Fee \$12 each Session

The ornament of the early Christian, Byzantine, Romanesque and Gothic styles both in architecture and the minor arts; Moslem and Indian ornament; the development of styles, motives and patterns. Periodic drawings.

**[ Architecture e35-36—Modern ornament.**

Will not be given in 1919-1920; will be offered in 1920-1921 ]

**Architecture e51—Principles of planning.** Credit V. 2 points Winter Session. Professor W. A. BORING and Mr. H. W. CORBETT

7-7:50 p. m., Wednesday. Room 407 Avery. Fee \$12

Elements and principles of plan grouping, composition of plans, sites, and surroundings analyzed, and application to problems explained. Characteristic classes of modern buildings studied in detail. Sketches and exercises in plan indication.

**Architecture e52—Principles of composition.** Credit V. 2 points Spring Session. Professor W. A. BORING and Mr. H. W. CORBETT  
7-7:50 p. m., Wednesday. Fee \$12

Elements described. Composition of elevation and sections, typical motives and specific types of buildings, with regard to expression, mass, profile, proportion, voids and solids, texture and color.

**Architecture e71—Drawing, pencil.** Credit V. 2 points Winter Session. Professor C. A. HARRIMAN

8-9:40 p. m., Monday and Thursday. Room 504 Avery. Fee \$12

**Architecture e72—Drawing, water color.** Credit V. 2 points Spring Session. Mr. J. LAUBER

1:10-4:30 p. m., Saturday. Fee \$12

Will not be given for less than ten students. Not limited to architectural students.

**Architecture e73—Drawing, charcoal.** Credit V. 2 points Winter Session. Professor C. A. HARRIMAN

8-9:40 p. m., Monday and Thursday. Room 502 Avery. Fee \$12

**Architecture e74—Drawing, water color.** Credit V. 2 points Spring Session. Mr. J. LAUBER

1:10-4:30 p. m., Saturday. Fee, \$12

Will not be given for less than ten students.

**Architecture e75—Drawing, pen and ink.** Credit V. 2 points Winter Session. Professor C. A. HARRIMAN

8-8:40 p. m., Monday and Thursday. Room 504 Avery. Fee \$12

**Architecture e76—Drawing, charcoal and life.** Credit V. 2 points Spring Session. Mr. J. LAUBER

8-9:40 p. m., Monday and Friday. Fee \$12

Prerequisite: Architecture e71 and 73 or equivalent. Not limited to architectural students.

**Architecture e77-78—Life drawing and composition.** Credit V. 2 points each Session. Mr. J. LAUBER

8-9:40 p. m., Monday and Friday. Room 701 Avery. Fee \$12 each Session

Prerequisite: Architecture e76 or its equivalent.

Will not be given for less than ten students. Not limited to architectural students.

**Architecture e80—Drawing, pencil.** Credit V. 2 points Spring Session. Professor C. A. HARRIMAN

8-9:40 p. m., Monday and Thursday. Fee \$12

Architecture e71 repeated in Spring Session.

**Architecture e82—Modeling.** Credit V. 2 points Spring Session. Mr. J. C. GREGORY

2-5:20 p. m., Saturday. Fee \$12

Will not be given for less than ten students.

## ARCHITECTURAL DESIGN

The courses in architectural design are conducted on the basis of a progressive series of problems and sketches. These are assigned in the form of programs issued at stated intervals. The work of the students, delivered at a designated time, is passed upon by a jury of architects, the whole program being in this respect identical with that of the Beaux-Arts Institute of Design. A registration fee of two dollars is required by the Institute, and this must be paid to the Chairman of the Committee on Education, 126 East 75th Street, New York City. More detailed information on this head will be found in a special folder to be obtained in Room 405 Avery Hall.

**Tuition Fees for Design.** The tuition fee in design, regardless of course, is \$25 per Session.

*Tuition fees are under no conditions returnable even though the full Session's work is not taken.*

Students are advanced in accordance with the regulations of the Society of Beaux-Arts Architects on the basis of values obtained.

NOTE. The full fee covers registration for regular problems of the Beaux-Arts Society. No additional fee is required for ten-hour sketches or for archæology or measured drawing problems. Upon *previous application* to Curator R. F. BACH, 405 Avery Hall, qualified students may also be admitted without additional fee to other problem competitions conducted by the School of Architecture.

Sketches and problems will be accepted only after tuition fees have been paid as indicated above.

**Prerequisites for all courses.** Work in the elements of architecture and shades and shadows, corresponding respectively to Architecture e1, e2, and e5, or their equivalents, such equivalents to be determined **before registration**. Those who wish subsequently to transfer their credits to the records of the School of Architecture must also submit Descriptive Geometry, Architecture e6, or its equivalent.

Students may consult Curator R. F. BACH in the Winter during the week of registration, beginning Wednesday, September 17, and in the Spring Session, beginning Saturday, January 31, respectively, from 7 to 9 p. m. in Room 405 Avery.

**Architecture e61—Elementary design.** Credit V.\* 20 hours. Messrs. M. PRÉVOT and H. W. CORBETT

Fee, see above

Major and minor problems corresponding to the Class B Analytique Problems of the Beaux-Arts Institute of Design.

**Architecture e62a—Elementary design.** Credit V.\* 20 hours. Messrs. M. PRÉVOT and H. W. CORBETT

Fee, see above

Major and minor problems corresponding to the Class B Elements (Analytiques) Problems of the Beaux-Arts Institute of Design.

Equivalent to e61, and taken only by students beginning Design in the Spring Session.

\* Students desiring credit for this course in the School of Architecture must submit a complete set of drawings done in Extension Teaching up to the time of the application for transference of credit and bearing the attestation of the instructor in charge. Requests for such transference of credit should be made to Curator R. F. BACH, School of Architecture, or left in writing for him at the office of the Director of Extension Teaching. The difference in tuition fees must be paid.



**Architecture e62—Intermediate design.** Credit V.\* 20 hours. Messrs. M. PRÉVOT and H. W. CORBETT

Fee, see above

Major and minor problems corresponding to the Class B Problems (Projets) of the Beaux-Arts Institute of Design.

Continued as **Arch. e63** in Winter Session following. Students entering in Winter Session may begin with **Arch. e63** and continue in **Arch. e62**.

**Architecture e64—Advanced design.** Credit V.\* 20 hours. Messrs. M. PRÉVOT and H. W. CORBETT

Fee, see above.

Major and minor problems corresponding to the Class A Problems (Projets) of the Beaux-Arts Institute of Design.

Continued as **Arch. e65—66** in succeeding year. Students may begin this course in any Session.

**Architecture e67-68—Thesis.** Credit V. 4 points either Session. Messrs. M. PRÉVOT and H. W. CORBETT

Fee \$24 either Session

An important final problem in design. Instructions will be sent to those qualified.

**The attention of students is also called to Greek 149 and 150, p. 63**

## ASTRONOMY

**Astronomy e1—Introduction to the science.** Credit I. 2 points Winter Session. Dr. C. S. BRAININ

7:10-9 p. m., Friday. Fee \$12

This course consists of a non-mathematical explanation of the simpler phenomena under everyday observation in the heavens. Among the topics considered are: The constellations and aids to the naked-eye recognition of the stars; the subjects of time and navigation; the earth and moon, their relation to each other and to the solar system and the universe; the sun, its spots and prominences; the planets, individually and as members of the solar system; the question of their habitability; eclipses, comets, and meteors; the stars, their motions and compositions; the nebulae and their relation to cosmic hypotheses.

Frequent use will be made of the equatorial telescope and other instruments of the observatory as well as of the Department's large collection of lantern slides.

Text-book: Jacoby's *Astronomy*.

**Astronomy e2—Introduction to the science.** Credit I. 2 points Spring Session. Dr. C. S. BRAININ

7:10-9 p. m., Friday. Fee \$12

Astronomy e1 repeated in the Spring Session.

## BOHEMIAN (See Czech, p. 92)

## BOOKKEEPING

**Bookkeeping e1—Secretarial bookkeeping.** 4 points Winter Session. Fee \$24. Mr. C. C. HUGHES

Section 1—4:30-6:10 p. m., Wednesday, and 9-10:40 a. m., Saturday. Room 511 Journalism

Section 2—4:15-6 p. m., Monday and Friday. Room 503 Journalism

\* See foot-note on preceding page.



A knowledge of bookkeeping is not required of students taking this course. The purpose is to prepare the students to keep the books of the professional man as well as to interpret the accounts of a modern business. From the study of a few simple accounts the work will proceed to a drill in double entry as applied to a trading concern. Some of the special features of this course will include the preparation of various business forms, statements, and reports; construction of family budgets and household accounts; club and society accounts; controlling accounts; lawyers accounts; the private ledger and its relation to the general ledger; the bank account and bank reconcilements.

Complete in one Session.

**Bookkeeping e2—Secretarial bookkeeping.** 4 points Spring Session. Fee \$24. Mr. C. C. HUGHES

Section 1—4:30–6:10 p. m., Wednesday, and 9–10:40 a. m., Saturday.

Section 2—4:15–6 p. m., Monday and Friday.

This course is the same as Bookkeeping e1, given in the Spring Session.

## BOTANY

**Botany e1-2—Nature and development of plants.** Lectures and laboratory. Credit I, IV. 4 points each Session. Dr. B. O. DODGE

4 p. m., Monday and Thursday, Room 505 Schermerhorn; laboratory, 5–6:30 p. m., Room 502 Schermerhorn. Fee \$24 each Session

Organs, structure, and work of the plant; development of plant life through an examination of the important biologic types. This course is required of pre-medical students, to supplement Zoology e1a–2a; the two courses constitute one year of biology required by law for students intending to study medicine. Students who have a conflict in program may obtain this class at 4:30.

**Botany e1a-2a—General botany.** Lectures and laboratory. Credit I, IV. 2 points each Session. Dr. B. O. DODGE

1:10 p. m., Saturday, Room 505 Schermerhorn; laboratory, 2:10–4 p. m., Room 502 Schermerhorn. Fee \$12 each Session

Equivalent to Botany e1-2 if taken for two years.

**Botany e3-4—Edible and poisonous fungi.** Credit IV. 2 points each Session. Dr. B. O. DODGE

2:10 p. m., Saturday, Room 505 Schermerhorn; 3–4 p. m., laboratory, Room 502 Schermerhorn. Fee \$12 each Session

Laboratory work on the identification of the common types with field excursions for collecting and photographing specimens.

**Botany e5-6—Students having completed the preceding courses may continue their work by registering for this class, the hours and character of the work to be determined upon consultation with Professor R. A. HARPER.** Credit I. 2 points each Session. Fee \$12 each Session

## BUSINESS

### *Undergraduate Courses*

**Business e7-8—Business organization and administration.** Credit IX. 2 points each Session. Fee \$12 each Session. Professor R. M. HAIG and Mr. A. H. STOCKDER

Section 1—4:30-6:10 p. m., Thursday. Room 507 Journalism

Section 2—7:40-9:30 p. m., Tuesday. Room 507 Journalism

A brief survey of the development of business enterprise. A comparison of the individual proprietorship, the partnership and the corporation. The structure and organization of corporations; where to incorporate; the charter; organization meetings; selection of officers; proxies; voting trusts; standing committees, etc. General principles of business organization and administration. Factors influencing location and construction of plants. Purchasing and receiving; stores and perpetual inventories. Problems of employment and welfare work. Production routine; special wage systems; 'scientific' management and 'efficiency' movement; marketing and sales organization; credits and collections; advertising department; traffic and shipping; office organization; graphic records, etc.

The course is designed as a general survey of modern business procedure.

**Business e9-10—Economic geography.** 2 points each Session. Mr.

A. H. STOCKDER

7:30-9:10 p. m., Monday. Room 707 Journalism.. Fee \$12 each Session

This course is concerned with a study of the leading industrial and commercial activities of the great nations, with special reference to the United States. The physical conditions which influence the production of raw materials, the development of manufacturers, the laying out of routes of trade and the location of markets are first considered, and emphasis is then placed upon the production and distribution of the materials which enter into food, clothing and shelter.

**Business e13-14—Advertising display.** 2 points each Session. Mr. W. P.

LANGREICH

7:40-9:30 p. m., Monday, Room 507 Journalism. Fee \$12 each Session

This is a practice course in advertising layouts, supplemented by lectures on the attention-value of display and arrangement as applied to advertising. It deals principally with methods of reflecting the advertising idea pictorially and adjusting it to the nature of the goods advertised and the treatment of the text-matter of the advertisement. Students are given assignments designed to enable them to link together the sales, advertising, and the merchandise value of the advertisement.

Given in conjunction with the courses in practical and advanced advertising.

**Business e15—Practical advertising.** 2 points Winter Session. Mr. G. R.

HUBBART

7:40-9:30 p. m., Tuesday. Room 502 Hamilton. Fee \$12

This course deals with the theory, technique and practice of advertising from the point of view of the planner and writer of advertising copy. A part of the work consists in the study of merchandise as advertising subject-matter. The course consists of lectures supplemented by weekly practice assignments in the writing of copy.

**Business e16—Advanced advertising.** 2 points Spring Session. Mr. G. R.

HUBBART

7:40-9:30 p. m., Tuesday. Fee \$12

Advertising viewed as a factor in building business for a prescribed commodity. The course deals primarily with details of campaigns, plans, costs, methods, media and problems in circulation.

This course is a continuation of Business e15.

Prerequisite: Business e15 or equivalent.

**Business e16a—Practical advertising.** 2 points Spring Session. Mr.

G. R. HUBBART

7:40-9:30 p. m., Thursday. Fee \$12

Identical with Business e15, but offered in the Spring Session.

**Business e17—Salesmanship.** 2 points Winter Session. Mr. G. R. HUBBART  
7:40-9:30 p. m., Thursday. Room 502 Hamilton. Fee \$12

Selling and the essentials of salesmanship are considered in this course. The student is given a grounding in the principles of selling and practice in the presentation of a selling proposition from its inception in the customer's mind throughout its development and final consummation as a sale.

The distinct forms of sales are illustrated with typical problems in selling at retail, wholesale, the marketing of specialties and problems in promotion. The student is familiarized with the essential features in the linking of sales and advertising campaigns in the creation and development of business backgrounds.

The ultimate aim of this course and of Business e15 is to fit the student to analyze market problems and to apply to them the proper principles and methods of advertising and selling.

**Business e23-24—First year accounting.** Credit IX. 2 points each Session. Fee \$12 each Session. Messrs. F. P. BALTZ, R. T. BICKELL, E. L. OUTWIN, F. W. SCHOLZ, T. L. WOOLHOUSE, and Miss NINA MILLER

Section 1—5:00-6:40 p. m., Wednesday. Room 712 Journalism

Section 2—2:10-4:00 p. m., Saturday. Room 712 Journalism

Section 3—7:40-9:30 p. m., Monday. Room 511 Journalism

Section 4—7:40-9:30 p. m., Monday. Room 712 Journalism

Section 5—7:40-9:30 p. m., Tuesday. Room 511 Journalism

Section 6—7:40-9:30 p. m., Wednesday. Room 713 Journalism

Section 7—7:40-9:30 p. m., Thursday. Room 511 Journalism

Section 8—7:40-9:30 p. m., Friday. Room 511 Journalism

This course develops the subject rapidly, devoting its time and emphasis to the foundation problems of accounting. It is built up along the lines and methods of modern accounting practice. The subject matter includes: theories of debit and credit; classification of accounts; underlying principles of the various accounting records; business papers and documents used as the basis for first entry; simple problems of the balance sheet and income statement; single entry; controlling accounts; handling sales and purchases; safeguarding the cash; consignments; and related topics. Ample practice for students is provided. It is prerequisite to all the other courses in accounting.

**Business e23a—First year accounting.** Credit IX. 2 points Winter Session. Fee \$12. Messrs. E. M. BARBER and C. C. HUGHES

Section 1—7:40-9:30 p. m., Thursday. Room 202 Journalism

Section 2—7:40-9:30 p. m., Monday. Room 516 Schermerhorn

Identical with Business e24, but offered in the Winter Session for the benefit of those who have had Business e23.

**Business e24a—First year accounting.** Credit IX. 2 points Spring Session. Fee \$12. Messrs. E. M. BARBER and C. C. HUGHES

Section 1—7:40-9:30 p. m., Thursday

Section 2—7:40-9:30 p. m., Monday

Section 3—7:40-9:30 p. m., Friday

Identical with Business e23, but offered in the Spring Session for those beginning the study of accounting.

**Business e25-26—Second year accounting.** Credit IX. 2 points each Session. Fee \$12 each Session. Messrs. K. L. BAKER, L. F. BRUMM, and S. B. KOOPMAN



Section 1—7:40-9:30 p. m., Thursday. Room 713 Journalism

Section 2—7:40-9:30 p. m., Thursday. Room 712 Journalism

Section 3—7:40-9:30 p. m., Monday. Room 202 Journalism

A thorough study of the corporation and its related problems is the chief aim of the first half of the course. Some of the topics covered are: records and accounts peculiar to a corporation; elements of manufacturing accounts; perpetual inventory; voucher system and payroll methods; theories of the balance sheet; its make-up, form and arrangement; valuation of assets in the balance sheet; depreciation; showing of liabilities; valuation of capital stock; profits; dividends; reserves and surplus; sinking and other funds; income summary and problems connected therewith; liquidation of a corporation; consolidations and mergers; branch house accounting; fire loss adjustments; hypothecation of accounts receivable; etc.

Practice work for the Winter Session will consist of data in corporation manufacturing accounting for record in blanks and of correlated problems.

The work of the Spring Session will consist of carefully classified and graded problems, supplemented by lectures and demonstrations.

Prerequisite: Business e23-24.

**Business e25a—Second year accounting.** Credit IX. 2 points Winter Session. Mr. S. B. KOOPMAN

7:40-9:30 p. m., Monday. Room 713 Journalism. Fee \$12

Identical with Business e26, but offered in the Winter Session.

Prerequisite: Business e25.

**Business e26a—Second year accounting.** Credit IX. 2 points Spring Session. Mr. S. B. KOOPMAN

7:40-9:30 p. m., Monday. Fee \$12

Identical with Business e25, but offered in the Spring Session.

Prerequisite: Business e23-24.

**Business e27-28—Cost accounting.** Credit IX. 2 points each Session. Fee \$12 each Session. Messrs. J. F. D. ROHRBACH and C. A. HOWARD

Section 1—7:40-9:30 p. m., Wednesday. Room 511 Journalism

Section 2—7:40-9:30 p. m., Friday. Room 713 Journalism

The work of the Winter Session will consist of: Elements of costs; principles and general methods of cost finding; direct and indirect costs; direct and indirect expenses; wage systems; recording material and labor costs; compiling the cost data; control of cost records by financial books.

The work of the Spring Session will consist of: Examination of plants; devising of cost systems; estimating of cost systems; departmental cost systems; special order systems according to productive labor and machine cost plans; productive systems according to productive labor and machine cost plans.

Should be taken as a parallel course with Business e25-26.

Prerequisite: Business e23-24.

**For other courses in accounting, see pp. 35, 36.**

**Business e45—Corporation finance.** Credit IX. 2 points Winter Session. Professor H. LYON

7:40-9:30 p. m., Monday. Room 512 Journalism. Fee \$12

This course will follow the syllabus of the Investment Bankers Association and will present the variations of risk and income and control a corporation effects through the issuance of its securities; principles governing the issuance and proportions of classes of securities of a corporation, or the plan of capitalization, financial situations which lead to the issuance of particular forms of securities, the organization of subsidiaries, assumed bonds and guaranteed securities; leases; securities issued for mergers, combinations and consolidations; amortization of debt; the preparation of securities with relation to the market.



**Business e46—Corporation finance.** Credit IX. 2 points Spring Session.  
Professor H. LYON

7:40-9:30 p. m., Monday. Fee \$12

This course will follow the syllabus of the Investment Bankers Association. Though the student should preferably take Business e45 before taking this course, he may, by doing some extra reading, take this course without having had Business e45. The course will discuss the finding of funds for the capital account; financing through an appeal to the stockholders and stockholders' rights; work and methods of the banking houses in financing corporations and inducing capitalists to commit funds to the enterprise; making a 'market'; syndicate transactions, joint accounts and underwritings; management of incomes; financing of receiverships, readjustments of the capital account and reorganizations.

**Business e47—Investment finance.** Credit IX. 2 points Winter Session.  
Dr. F. A. DEWEY

7:40-9:30 p. m., Tuesday. Room 512 Journalism. Fee \$12

It is the purpose of this course and Business e48 to cover the field of investment in a broad general way and be helpful in indicating means and methods of investing. This course includes the mechanism, types and tests of investment; public and private securities; investment markets; government and municipal bonds, mortgages, corporation securities; financial news and sources of information.

**Business e48—Investment finance.** Credit IX. 2 points Spring Session.  
Dr. F. A. DEWEY

7:40-9:30 p. m., Tuesday. Fee \$12

Corporation securities with enough of the mechanism of corporation finance for investment analysis; mortgage bonds, collateral securities, debentures and stock as investments; investment institutions; general investment principles, distribution of risk, etc.; speculation and investment; the mechanism of the stock exchange and methods of buying and selling securities on the exchange.

**Business e57-58—Business statistics.** Credit IX. 2 points each Session.  
Mr. C. E. SCATTERGOOD

5:30-6:20 p. m., Monday and Wednesday. Room 609 Journalism. Fee \$12 each Session

A study of such elements of statistics as will enable the business man to understand readily current published statistics and to assist him in his individual business by the application of statistical method thereto, with due regard that the results obtained shall be worth more than the expense of the method.

The course is divided into two distinct parts, so that a student entering during the second session will in no wise be handicapped. Winter Session treats of the interpretation of published statistics. Spring Session deals with the building-up and control of a statistical organization for a corporation or other business enterprise.

**Business e61—Elementary business arithmetic.** 2 points Winter Session.  
Mr. G. H. VAN TUYL

7:40-9:30 p. m., Tuesday. Room 605 Journalism. Fee \$12

A thorough review of fundamental operations as applied to everyday business transactions, particular attention being given to simple, short, practical methods of calculation. Special topics considered are: Aliquot parts as applied to multiplication, division, percentage and interest; rapid calculations; checking results; fundamental principles of arithmetic as used in the solution of problems; graphs; percentage and its applications; bank discount.

**Business e61a—Advanced business arithmetic.** 2 points Winter Session.  
Mr. G. H. VAN TUYL

6-7:40 p. m., Tuesday. Room 605 Journalism. Fee \$12

**Business e62—Business mathematics.** 2 points Spring Session. Mr. G. H. VAN TUYL

7:40-9:30 p. m., Tuesday. Fee \$12

This course presupposes a working knowledge of elementary business arithmetic and will include such topics as insurance, taxes, sinking funds, stocks, bonds, exchange, United States customs and equation of accounts. Calculating tables will be introduced and used in solving problems. The work is designed to be helpful to teachers of business arithmetic in secondary schools and in private business schools; also to accountants and others in banks and brokerage houses.

**Business e62a—Elementary business arithmetic.** 2 points Spring Session. Mr. G. H. VAN TUYL

6-7:40 p. m., Tuesday. Fee \$12

Business e61 repeated in the Spring Session. Given if called for.

**Business e70—Commercial law for engineering students.** Credit V. 2 points Spring Session. Mr. W. LILLY

4:20-6 p. m., Tuesday. Fee \$12

This course is intended to give the student some knowledge of the ordinary legal aspects of common business transactions and should enable him to gain that comprehension of business which may be had only from an understanding of the legal situations involved. A student should get from the course about that acquaintance with the law which a business man usually acquires from an extended and varied business experience. He should derive from it a sense of the occasions when he should consult a lawyer for guidance to avoid making legal mistakes rather than any feeling that he is competent to dispense with legal advice. Though the student will have a text to read, the work of the lecture hour will consist almost entirely of the presentation of business situations (states of fact) and a class discussion of the legal consequences. In this way the course will cover topics of contracts, sales, bailments, negotiable instruments, agency, partnerships, real and personal property, and bankruptcy.

**Business e73-74—Contracts.** Credit IX. 2 points each Session. Professor R. W. GIFFORD

7:40-9:30 p. m., Thursday. Room 515 Kent. Fee \$12 each Session

This course aims to furnish an exposition of the fundamental principles of the law of contracts, including parties, subject-matter, the essentials of mutual assent, formal requisites, consideration, construction, discharge and consequences due to breach of contract.

Text-books: Keener's *Cases on Contracts* (2d edition).

**Business e75-76—Second-year business law.** Credit IX. 2 points each Session. Mr. W. LILLY

7:40-9:30 p. m., Tuesday. Room 401 Kent. Fee \$12 each Session

This course is for students who have had Business e73-74 or an equivalent, and is provided more especially for students of accounting, but is open to others who qualify. It will cover topics of sales, bailments, agency, partnerships, corporations, real and personal property, bankruptcy, and negotiable instruments.

**Business e77—Life insurance.** Credit IX. 2 points Winter Session. Dr. R. H. BLANCHARD

5:30-7:10 p. m., Wednesday. Room 515 Kent. Fee \$12

The need for life insurance, personal and business risks; types of contracts, analysis of use and provisions; the scientific basis of life insurance, theory of probability and the mortality table; calculations of premiums; insuring organizations; reserves; law of life insurance; state regulation.

**Business e78—Casualty insurance.** Credit IX. 2 points Spring Session. Dr. R. H. BLANCHARD

5:30-7:10 p. m., Wednesday. Fee \$12

Devoted principally to the development of employer's liability and to the principles and practices of workmen's compensation and its insurance; compensation insurance organizations, contracts, rates and rating, and reserves. Others leading forms of casualty insurance; such as accident and health insurance, automobile insurance, steam boiler insurance, etc.

**Business e81—Fire insurance.** Credit IX. 2 points Winter Session. Dr. R. H. BLANCHARD

5:30-7:10 p. m., Thursday. Room 515 Kent. Fee \$12

Fundamentals of insurance; fire insurance organizations; policy contracts, forms and interpretation; fire prevention; rating; underwriters' associations; adjustments; reinsurance; governmental supervision. A discussion of the principles, practices, and problems of fire insurance.

**Business e82—Marine insurance.** Credit IX. 2 points Spring Session. Dr. R. H. BLANCHARD

5:30-7:10 p. m., Thursday. Fee \$12

A survey of the development of marine insurance with particular reference to its legal aspects, types of losses, the effects of the war, practical methods of underwriting and loss settlement, Lloyds and other insurers, and its bearing on foreign trade.

**Business e85-86—Latin-American commercial law.** Credit IX. 2 points each Session. Mr. T. E. OBREGON

7:40-9:30 p. m., Thursday. Room 707 Journalism. Fee \$12 each Session

This course aims to afford students a general legal knowledge of ways in which to carry on business in Latin-American countries.

During the first semester the course will cover the following topics: Merchants, their rights and obligations; commercial contracts in general; brokers; banking; agents; partnerships; corporations; purchase and sale. During the second semester the following will be discussed: Negotiable instruments; foreign exchange; transportation overland; insurance; patents; copyrights and trade marks; travelers taxes and licenses. Anglo-American and Spanish-American law will be compared.

**Business eb93-94—Commercial French: intensive training course in spoken French.** Credit IX. 2 points each Session. Professor P. DE BACOURT

4-5:40 p. m., Tuesday. Room 610 Journalism. Fee \$12 each Session

To supplement Commercial French b93-94 of the School of Business.

Intended to develop facility of speech for commercial purposes.

Prerequisite: French b94 or French 4, or a sufficient command of spoken French to the satisfaction of the instructor.

### *Graduate Courses*

These courses are open to qualified students without restriction.

**Business e109-110—Personnel management.** Credit II, IX. 3 points each Session. Professor J. J. COSS

7:30-9:20 p. m., Friday. Room 512 Journalism. Fee \$18 each Session

The aim of the course is to train executives for personnel management in business. Both principles and practice receive detailed discussion, and opportunity is provided for the application of the knowledge gained. The course will cover the following topics:



- I. Need and organization of a functionalized personnel office. Scope of personnel work—The plant or industrial survey—Labor turnover and its reduction—Methods of procuring and selecting employees (physical examinations, trade and intelligence tests and rating scales)—Methods of preparing specifications for employees needed (job analysis and personnel specifications).
- II. The prevention and adjustment of labor difficulties—Labor organizations, plans for industrial councils and work committees, arbitration, strikes, lockouts—Industrial training and education—Promotion and transfer—Wage determination (present and proposed plans)—Conditions of labor—Labor laws—Place of the personnel manager in the labor community.

**Business e112—The marketing of manufactured products.** Credit II, IX. 3 points Spring Session. Professor R. M. HAIG  
7:40-9:30 p. m., Tuesday. Fee \$18

A treatment of the problems involved in the distribution of manufactured products, including a consideration of such topics as market analysis, marketing organizations and methods, the function of advertising, private brands, price problems, price maintenance, etc.

**Business e117—The psychology of advertising and selling.** Credit II, IX. 3 points Winter Session. Professor H. L. HOLLINGWORTH  
7:40-9:20 p. m., Wednesday. Room 407 Schermerhorn. Fee \$18

Application of psychological principles and experimental methods to the problems of appeal and response in advertising and selling. Analysis and evaluation of the methods and devices of publicity on the basis of (1) the known facts of human nature; (2) detailed examination of actual advertising campaigns and analysis of their results; (3) application of laboratory and statistical technique; and (4) comparative study of old and new methods of marketing. The material for the entire course is based on the findings of experimental investigation and the results of actual sales campaigns. Illustrated by lantern slides and current publicity materials. This course may be appropriately followed by Psychology e146 or accompanied by Psychology e145.

**Business e118a—The psychology of advertising and selling.** Credit II, IX. 3 points Spring Session. Professor H. L. HOLLINGWORTH  
4:30-6:10 p. m., Monday. Fee \$18

This course is identical with Business e117 but is given in the Spring Session in the afternoon. It may be appropriately preceded by Psychology e145 or accompanied by Psychology e146.

**Business e119-120—Merchandising research.** Credit II, IX. 3 points each Session. Mr. J. B. SWINNEY  
5-6:40 p. m., Monday. Room 707 Journalism. Fee \$18 each Session

The purpose of this course is to show the application of fundamental methods of research to wholesale and retail merchandising. It is assumed that those who elect the course have completed elementary courses in economics, business organization, accounting, corporation finance and statistical method. The course will include such topics as the following: The purposes and method of research in merchandising; the standardization of merchandise and expense figures; the building up of groups of comparable figures and their analysis and interpretation; the analysis of typical departments in wholesale and retail concerns from the standpoints of organization and management, merchandise, selling, operating and recording systems, personnel, etc.; community and sectional analyses; comparison shopping; the building up of statements of fundamental policies and operating methods.

Arrangements have been made to do practice work in connection with the course in several wholesale and retail concerns of the city, and in organizations specializing on merchandising research.



**Business e129-130—Third-year accounting.** Credit II, IX. 3 points each Session. Professor R. B. KESTER

7:40-9:30 p. m., Friday. Room 712 Journalism. Fee \$18 each Session

A course in advanced problems. The early part of the work will consist of specialized problems illustrating accounts and methods peculiar to various classes of enterprises. The later part will comprise selected C. P. A. and miscellaneous problems. The work of the classroom will be conducted by means of lectures, demonstrations, and reports.

A charge will be made for the problems.

Prerequisite: Business e25-26.

**Business e131-132—Auditing, theory and practice.** Credit II, IX. 3 points each Session. Professor R. H. MONTGOMERY and Mr. K. L. BAKER

7:40-9:30 p. m., Thursday. Room 507 Journalism. Fee \$18 each Session

This course is for advanced students only. A text-book on auditing will be used as a basis for home assignments, and students will be expected to spend at least two hours each week preparing for the quiz which forms part of the classroom work. Students will be taught to prepare working audit programs for various classes of business. The principle object of this course will be to train and develop the analytical faculties of the students. Methods of accounting used by unsuccessful concerns will be explained and the causes of failure analyzed. Methods followed by concerns which need capital involving hypothecation of assets, and manipulation of accounts with allied and subsidiary concerns will be discussed.

Prerequisite: Business e25-26.

Students can apply the essential underlying principles of auditing as developed in this course to practical work by taking Business e133-134 (laboratory) as a parallel course.

**Business e133-134—Accounting laboratory.** Credit II, IX. 3 points each Session. Fee \$18 each Session. Mr. T. W. BYRNES

Section 1—7:20-9:30 p. m., Monday. Rooms 503 and 505 Journalism

Section 2—7:20-9:30 p. m., Wednesday. Rooms 503 and 505 Journalism

This course consists of laboratory work exclusively. The material used will be the account books of various firms and corporations which have gone into bankruptcy or liquidation. These records present many interesting and complicated problems. Many sets of books are available offering a wide scope for analysis and investigation. Practical questions and problems compiled from these old records will be given to the student to answer and solve by an actual examination of the books.

These will give the student a practical working test under conditions which very closely correspond to those to be met in actual practice, and the course will be particularly advantageous to students who have had only a limited opportunity to examine books used by various classes of enterprises.

The laboratory also contains many blank forms, designed for different classes of enterprises.

Prerequisite: Business e25-26, and the student should be pursuing Business e131-132 as a parallel course.

**Business e135—Office management.** Credit II, IX. 3 points Winter Session. Miss NINA MILLER

7:40-9:30 p. m., Tuesday. Room 712 Journalism. Fee \$18

The principles involved in planning effective accounting systems and records for present-day office management

The subject-matter includes organization and arrangement of the office, the relation of the various departments and persons to one another, and the records which will best furnish facts of actual conditions to the executive.

Practical work will be required in designing systems for recording the information needed in the various departments of trading, manufacturing and other business organizations, such as, purchasing, storing, credits, collections, sales, etc.

Open to undergraduates with the consent of the instructor.

**Business e136—Analysis of financial reports.** Credit II, IX. 3 points Spring Session. Miss NINA MILLER

7:40-9:30 p. m., Tuesday. Fee \$18

Practical application of accounting and auditing principles to the analysis and criticism of the financial reports of industrial organizations, public service corporations and railways. Drill in the classification of accounts prescribed by the Public Utility Commission of the State of New York, the Interstate Commerce Commission, and the recommendations of the Federal Reserve System.

Open to undergraduates with the consent of the instructor.

**Business e137-138—Public utilities accounting.** Credit II, IX. 3 points each Session. Mr. L. K. FRANK

7:40-9:30 p. m., Wednesday. Room 202 Journalism. Fee \$18 each Session

An examination into the principles and practices as developed by the Interstate Commerce Commission, the State Commissions, and the companies operating under the prescribed systems of accounts; the use of accounting reports for regulative and administrative purposes. underlying departmental organization; and the accounting and financial problems peculiar to public utilities.

**Business e139—Income tax procedure.** Credit II, IX. 3 points Winter Session. Professor R. M. HAIG

7:40-9:30 p. m., Tuesday. Room 602 Hamilton. Fee \$18

A consideration of the technical problems arising from the imposition of the Federal taxes on incomes and excess profits. The problems are approached from the point of view of the tax-payer who desires to determine the exact application of the law to the interests he represents.

**Business e167—Railway traffic and rates.** Credit II, IX. 3 points Winter Session. Professor T. W. VAN METRE

5:50-7:30 p. m., Tuesday. Room 609 Journalism. Fee \$18

Organization and service of the traffic department; systems of rates and fares; accounting of freight and passenger train revenues; traffic problems, such as car service, demurrage, and claims.

**Business e168a—Railway traffic and rates.** Credit II, IX. 3 points Spring Session. Professor T. W. VAN METRE

5:50-7:30 p. m., Tuesday. Fee \$18

Business e167 repeated in Spring Session for new students.

**Business e171-172—The principles and practices of factory management.** Credit II, IX. 3 points each Session. Professor W. RAUTENSTRAUCH

7-9 p. m., Monday. Room 502 Hamilton. Fee \$18 each Session

This course is adapted to men in the industries who are in charge of departments of factories. Other men qualified by contact with production problems are also admitted. Attendants to these lectures will be instructed in the principles underlying the successful management of factories and the practices of representative industries in the conduct of planning departments, tool rooms, drafting rooms, store rooms, purchasing and sales departments.

The problem of wage payments, costs of production and methods of cost finding and estimating are dealt with.

Attention is given to the establishment of lines of control through line organization and functional organization and to the graphic representation of the prime variable of the business upon which control may be founded. A couple of visits may be made to the factories operating under the lecturer's general supervision.

**Business e189-190—Marketing methods in foreign trade.** Credit II, IX.  
3 points each Session. Professor G. E. SNIDER  
5:20-7 p. m., Friday. Room 609 Journalism. Fee \$18 each Session

This course includes the study of, and practice in, document technique, the study of terms of sale and delivery, sales practice as determined by the line of goods and the market, fundamental sales factors, export trade channels, foreign credits, and financing foreign shipments.

**History e177—Latin America: people; government; resources.** Credit II, IX. For those taking both hours, 3 points Winter Session. Professor W. R. SHEPHERD

Lecture, 7:30-8:20 p. m., conference, 8:20-9:10 p. m., Monday. Room 615 Kent. Fee \$18

This course, followed by History e178, aims to supply the knowledge and cultivate the attitude of mind which may enable Americans to understand Latin-Americans, appreciate their circumstances, work with them along the lines of material and intellectual progress, and contribute in general to the promotion of inter-American friendship and commerce.

**History e178—Latin America; industry; transportation; commerce.** Credit II, IX. For those taking both hours, 3 points Spring Session. Professor W. R. SHEPHERD

Lecture, 7:30-8:20 p. m., conference, 8:20-9:10 p. m., Monday. Fee \$18

See description of History e177.

**Psychology e145—Vocational and industrial psychology.** Credit II, IX.  
3 points Winter Session. Professor H. L. HOLLINGWORTH  
4:30-6:10 p. m., Monday. Room 407 Schermerhorn. Fee \$18

Psychological methods and principles applied to the problems of human engineering, in such fields as vocational guidance, the selection of employees, management and organization of personnel, industrial time and motion study, job-analysis, trade-testing, and the personal and environmental conditions of effective and satisfying work. Illustrated by concrete demonstrations and by the results of current studies in the field. This course may be appropriately followed by Business e118 or accompanied by Business e117.

**Psychology e146a—Vocational and industrial psychology.** Credit II, IX.  
3 points Spring Session. Professor H. L. HOLLINGWORTH  
7:40-9:20 p. m., Wednesday. Fee \$18

This course is identical with Psychology e145 but is given in the Spring Session and in the evening. It may be appropriately preceded by Business e117 or accompanied by Business e118a.

### *Economics*

**Economics e1-2—Principles of economics.** Credit I. 3 points each Session. Dr. R. H. BLANCHARD

4:30-5:45 p. m., Tuesday and Friday. Room 603 Journalism. Fee \$18 each Session

Economics is the study of business activity from the standpoint of public welfare. This course undertakes first to explain the present-day organization and operation of industry, and second to consider how far the present situation needs correction from the standpoint of efficiency in production and justice in distribution. The course will be concerned with an historical and analytical study of the principles, followed by a discussion of practical economic questions, such as the tariff, money and banking, the labor problem, etc.



**Economics e1a-e2a—Principles of economics.** Credit I. 2 points each Session. Fee \$12 each Session. Professors R. C. McCREA and T. W. VAN METRE and Mr. T. C. BONBRIGHT

Section 1—7:30-9:10 p. m., Wednesday. Room 603 Journalism

Section 2—7:30-9:10 p. m., Thursday. Room 605 Journalism

This course covers the same ground as Economics e1-2, but involves less extensive reading and discussion.

**Economics e4—Principles of economics.** Credit I. 3 points Spring Session. Mr. J. C. BONBRIGHT

4:30-5:45 p. m., Tuesday and Friday. Fee \$18

Economics e1 repeated in the Spring Session for new students. A beginning class.

**Economics e4a—Principles of economics.** Credit I. 2 points Spring Session. Mr. J. C. BONBRIGHT

7:30-9:10 p. m., Wednesday. Fee \$12

Economics e1a repeated in the Spring Session for new students. A beginning class.

**Economics e5a—Principles of economics.** Credit I. 2 points Winter Session. Mr. J. C. BONBRIGHT

7:30-9:10 p. m., Wednesday. Room 605 Journalism. Fee \$12

Economics e2a given in the Winter Session.

## CHEMISTRY

**Chemistry eA1—General chemistry.** Elementary course for students beginning the study of chemistry. 2 lectures, 1 recitation, and 2 hours' laboratory practice a week. Credit I, IV. 4 points Winter Session

7-9:50 p. m., Tuesday and 7-8:50 p. m., Friday. Fee \$24

Lecture, 7-7:50 p. m., Tuesday and Friday. Room 309 Havemeyer

Recitation, 8-8:50 p. m., Friday. Rooms 307, 511 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday. Room 615 Havemeyer

This course is the duplicate of the day course A1. It is prerequisite to the other courses in chemistry given in Extension Teaching and to the first-year chemistry in the combined six-year College and Engineering course.

Deposit for breakage, \$20.

Text-books: Smith's *Elementary Chemistry* and *Laboratory Outline* (interleaved).

**Chemistry eA2—General chemistry.** Course eA1 repeated in the Spring Session for students desiring to begin in February. Credit I, IV. 4 points Spring Session.

7-9:50 p. m., Tuesday; 7-8:50 p. m., Friday. Fees as for Chemistry eA1, above. Fee \$24

Lecture, 7-7:50 p. m., Tuesday and Friday

Recitation, 8-8:50 p. m., Friday

Laboratory, 8-9:50 p. m., Tuesday

Deposit for breakage, \$20.



**Chemistry eA3-A4—General chemistry.** Elementary course for students beginning the study of chemistry. Saturday afternoons throughout the year. Credit I, IV. 2 points each Session. Mr. A. H. WRIGHT

1-4:30 p. m., Saturday. Fee \$12 each Session

Lecture 3:30-4:30 p. m.; recitation, 3-3:30 p. m. Room 311 Havemeyer  
Laboratory 1-3 p. m. Room 615 Havemeyer

Identical with eA1 or eA2.

Deposit for breakage, \$20 for the year.

Students using Chemistry eA4 to complete an imperfect elementary preparation may receive 4 points for the course on the approval of the instructor, paying \$24. Such students must register for Chemistry eA4 (a).

**Chemistry eX1-X2—Technical-industrial quantitative analysis.** 3½ points each Session. Professor H. A. FALES

7-9:50 p. m., Tuesday and Friday. Fee \$21 each Session

Lecture, 7-7:50 p. m., Tuesday. Room 504 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday; 7-9:50 p. m., Friday. Room 504 Havemeyer

A course primarily designed so that those who are engaged in laboratories or works may follow up the technique or theoretical principles of the particular problems in which they are interested. The laboratory work will be assigned largely to meet the individual requirements of each student; the classroom work will be coordinated with that of the laboratory, and in addition will include certain topics of general interest, such as the theory of neutralization reactions, oxidation-reduction, complex formation, etc.

Prerequisite: Actual employment in a laboratory or works, or Chemistry 3-4, 11-12; Physics 6, 7-8, 49-50.

**Chemistry e3-4—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week in each Session. Credit I, IV, V. 5 points each Session. Identical in content and credit with Chemistry e6-7. Mr. R. J. MOORE and assistants

7-9:50 p. m., Tuesday, Wednesday, and Friday. Fee \$30 each Session

Lecture, 9-9:50 p. m., Tuesday, Wednesday, and Friday. Room 311 Havemeyer

Laboratory, 7-8:50 p. m., Tuesday, Wednesday, and Friday. Room 615 Havemeyer

Deposit for breakage, \$25 first term; \$20 second term.

Prerequisite: Chemistry eA1, eA2, or the equivalent, and elementary physics.

**Chemistry e6—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Spring Session. Mr. R. J. MOORE and assistants

7-9:50 p. m., Tuesday, Wednesday, and Friday. Fee \$30

Lecture, 7-7:50 p. m., Tuesday, Wednesday, and Friday

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday

This course, which presupposes a knowledge of general chemistry (eA1) continues the study of general chemistry, with particular reference to giving a greater knowledge of descriptive chemistry and a more advanced and systematic discussion of general principles and their applications. This course followed by Chemistry e7 aims thus to prepare the student for the courses in organic chemistry or in qualitative analysis. It is equivalent to Chemistry 6—required of all first-year students in the combined six-year College and Engineering course, or to Chemistry 3-.

Deposit for breakage, \$25.

**Text-books:** Smith's *Introduction to Inorganic Chemistry* and *Experimental Inorganic Chemistry*.

**Prerequisite:** Chemistry eA1 or eA2 or the equivalent.

**NOTE.** Chemistry eA1 followed by Courses e6-7 or e3-4, e11, and e45-46 are accepted for admission to the College of Physicians and Surgeons.

**Chemistry e7—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Winter Session.  
Mr. R. J. MOORE and assistant

7-9:50 p. m., Tuesday, Wednesday, and Friday. Fee \$30

Lecture, 7-7:50 p. m., Tuesday, Wednesday, and Friday. Room 311 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday. Room 615 Havemeyer

This course is a continuation of Chemistry e6. It is equivalent to Chemistry -7 required of all second-year students in the combined six-year College and Engineering course, or to Chemistry -4.

Deposit for breakage, \$20.

**Prerequisite:** Chemistry e6 or e3 or the equivalent.

**Chemistry e11—Qualitative analysis.** 2 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Winter Session

7-9:50 p. m., Tuesday and Wednesday; 7-8:50 p. m., Friday. Fee \$30

Lecture, 7-7:50 p. m., Tuesday and Friday. Room 307 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday; 7-9:50 p. m., Wednesday; and 8-8:50 p. m., Friday. Room 615 Havemeyer

A systematic course in the theory and practice of inorganic qualitative analysis based upon the principles of modern chemistry. It is equivalent to Chemistry 14- required of all second-year students in the combined six-year College and Engineering course, or to Chemistry 11-.

Deposit for breakage, \$25.

**Text-book:** Steiglitz' *Qualitative Analysis, Pt. I.*

**Prerequisite:** Chemistry e6-7, 6-7, e3-4, or 3-4.

**NOTE.** Students who have previously completed the greater part of this course may, with the consent of the Director, register for the remainder, counting it 1 to 3 points.

**Chemistry e12—Qualitative analysis.** 1 hour classroom and 6 hours' laboratory work a week. Credit I, IV, V. 4 points Spring Session. Mr. K. KULLMANN

7-9:50 p. m., Tuesday; 7-8:50 p. m., Wednesday and Friday. Fee \$24

Lecture, 7-7:50 p. m., Wednesday

Laboratory, 7-9:50 p. m., Tuesday; 8-8:50 p. m., Wednesday; and 7-8:50 p. m., Friday

This course is a continuation of Chemistry e11. It is equivalent to Chemistry -15 required of all third-year students in the combined six-year College and Engineering course, or to Chemistry -12.

Deposit, \$20.

**Text-book:** Steiglitz' *Qualitative Analysis, Pt. I.*

**Prerequisite:** Chemistry e14, 14- or -12.

**NOTE.** Students who have previously completed the greater part of this course may, with the consent of the Director, register for the remainder, counting it 1 to 3 points.

**Chemistry e14—Qualitative analysis.** 2 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Spring Session

7-9:50 p. m., Tuesday and Wednesday; 7-8:50 p. m., Friday. Fee \$30  
 Lecture, 7-7:50 p. m., Tuesday and Friday  
 Laboratory, 8-9:50 p. m., Tuesday; 7-9:50 p. m., Wednesday; and 8-8:50 p. m., Friday

Identical with Chemistry e11, but given in the Spring Session. Should be followed by Chemistry e15.

Prerequisite: Chemistry e6-7, 6-7, e3-4 or 3-4.

Deposit for breakage, \$25.

**Chemistry e15—Qualitative analysis.** 1 hour classroom and 6 hours' laboratory work a week. Credit I, IV, V. 4 points Winter Session. Mr. K. KULLMANN  
 7-9:50 p. m., Tuesday; 7-8:50 p. m., Wednesday and Friday. Fee \$24  
 Lecture, 7-8:50 p. m., Wednesday. Room 307 Havemeyer  
 Laboratory, 7-9:50 p. m., Tuesday; 8-8:50 p. m., Wednesday; and 7-8:50 p. m., Friday. Room 602 Havemeyer

Identical with Chemistry e12, but given in the Winter Session. Should be followed by Chemistry e72.

Prerequisite: Chemistry e14 or e11.

Deposit for breakage, \$20.

**Chemistry e45-46—Organic chemistry.** Short course. 1½ hours' classroom and 3 hours' laboratory work a week in each Session. Credit I, IV. 3 points each Session. No credit for Chemistry e45 or e46 separately. Mr. W. E. MORGAN and assistant

7-9:15 p. m., Tuesday and Friday. Fee \$18 each Session

Lecture, 7-7:40 p. m., Tuesday and Friday. Room 413 Havemeyer

Laboratory, 7:40-9:15 p. m., Tuesday and Friday. Room 602 Havemeyer

A brief survey of the more important classes of organic compounds.

Deposit for breakage, \$30 each Session.

Prerequisites: Chemistry e3-4, e6-7, or the equivalent, and elementary physics. Chemistry e11 or e14 is recommended also.

Equivalent to Chemistry 46.

**For courses in General science, see Journalism e1 (popular Chemistry) and e2, p. 68**

## CHINESE

### *Far Eastern Trade*

The Slavonic Department under Professor PRINCE, with the consent of the University authorities, has arranged to administer temporarily the following courses:

**Chinese e102—Economic problems of China with special reference to modern trade conditions.** Credit II. 3 points Spring Session. Mr. Y. M. CHEN  
 8:20-9:10 p. m., Tuesday and Friday. Fee \$18

This lecture course aims to cover an intensive study of domestic and foreign trade in China, including a general survey of the development of Chinese commercial relations with the West, as well as a discussion of China's resources, revenues, currency, weights and measures, and transportation facilities. Special attention will be given to Chinese business methods and in what conditions, as well as the opportunities for American enterprise.



**Chinese e104—Business Chinese.** Credit II. 3 points Spring Session.

Mr. Y. M. CHEN

7:00–8:00 p. m., Tuesday and Friday. Fee \$18

This practical course is designed to give to students a working knowledge of everyday Mandarin, with special emphasis on the business vocabulary. It will include the use of Romanized Chinese, the principle of the construction of the essential Chinese characters, as well as conversation lessons in Mandarin, with thorough drill in the tones.

**CROATIAN (See Serb, p. 93)**

## DRAWING

**Drawing eW1—Freehand drawing.** 2 points Winter Session. Mr. J. E.

BEANS

1:30–5:30 p. m., Saturday. Room 406 Engineering. Fee \$12

Will consist of practice in the elements of freehand perspective, and in drawing from casts or machine parts in outline, and in light and shade.

The completion of this course will be accepted as satisfying the entrance requirement in drawing.

**Drawing eW2—Freehand drawing.** 2 points Spring Session. Mr. J. E.

BEANS

1:30–5:30 p. m., Saturday. Fee \$12

Drawing eW1 repeated in the Spring Session.

**ECONOMICS (See Business, pp. 38, 39)**

## ENGINEERING

### *Civil Engineering*

**NOTE.** With the exception of Civil Engineering e1–2, these courses are intended solely for men already engaged in practical work. They do not correspond to day courses and no university credit is allowed for them. Students should note the prerequisites and are urged to confer with the instructor when in doubt as to the requirements. In connection with the courses in surveying attention is called to the complete practical courses given during the summer at Camp Columbia, Morris, Conn. These courses are open to properly qualified students who have fulfilled the necessary prerequisites. For further information address the Secretary, Columbia University, New York.

**Civil engineering e1–2—Theory of plane surveying.** Equivalent to Course CE2 advised for all students in the college preparatory course preliminary to the graduate courses in civil, mining, metallurgical, and sanitary engineering. Credit I, V. 2 points each Session. Mr. W. J. KREFELD

7:30–9:10 p. m., Wednesday. Room 306 Engineering. Fee \$12 each Session

Winter Session: General principle of surveying and surveying instruments. Units and measurements. Errors and limits of precision. Tapes and measurement of distances. The vernier and level bubble. The wye and dumpy levels, theory of leveling, and rods. The compass, magnetic declination and variation, and local attraction. The engineer's transit; measurement of angles, azimuth and traversing. Latitude and departure, error of closure.

Spring Session: Surveys and computations; Land surveying, including farm, city and public land surveys, computation of coordinates and areas, parting off land, description, and relocation. Topographic surveying, transit and stadia method, theory and reduction of stadia measurements, the plane table and government work. Hydrographic, mine and



construction surveys. An opportunity will be given students to handle and use the instruments described, by special arrangement with the instructor.

Prerequisite: Plane trigonometry (see Structural mechanics eXI-X2) or equivalent; also Winter Session prerequisite for Spring Session.

Text-book: Finch's *Plane Surveying*.

### **Civil engineering eY1-Y2—Plain and reinforced concrete construction.**

3 points each Session. Professor J. K. FINCH

7:30–9:00 p. m., Mondays and Thursdays. Room 306 Engineering. Fee \$18 each Session

Winter Session: Advantages, general definitions. Cement, manufacture, specifications, testing. The aggregate, proportions and strength of concrete. Mixing, depositing, forms. Flexure and design of plain beams. Reinforced beams. Rectangular and 'T' beams in bending. Shear and diagonal tension. Slabs. Columns.

Spring Session: Theory, design and construction. Bearing power of soils, earth and water pressure and loads. Gravity and cantilever retaining walls. Counterfoot reservoir wall. Slab and buttress dam. Design of forms for same. Design of pipes and standpipe. Highway slab and girder bridges. Loft building, including foundations and typical beams and columns.

No text-book will be used for this course, but students will be furnished with pamphlets, notes and tables. The Spring Session will be largely given over to actual design. The instructor will be present on evenings set for this work, from 7–10, in the drafting room, Room 404 Engineering. As a reference book on the work of the Winter Session, Hool's *Reinforced Concrete Construction*, Vol. I, and as general a reference, Hool and Johnson, *Concrete Engineers' Handbook*, are recommended.

Prerequisites: Structural mechanics eZ1-Z2 and Mechanical drafting e1-2 or equivalent; also Winter Session prerequisite to Spring Session.

Additional fee \$2

### **Civil engineering e257a—Advanced course in reinforced concrete bridge construction.** Credit III, V. 4 points Winter Session. Mr A. H. BEYER

15 weeks, 2–4 p. m., Saturday. Room 306 Engineering. Fee \$24

Conferences, reading and design work.

Prerequisite: Civil engineering eY1-Y2, Plain and reinforced concrete construction or equivalent.

### *Electrical Engineering*

### **Electrical engineering e1—Elements of electrical engineering.** Lectures.

3 points Winter Session. Mr. F. R. KELLER

7:30–9:10 p. m., Tuesday and Friday. Room 302 Engineering. Fee \$18

Designed to give the student a general knowledge of the principles of electricity and magnetism and their applications in engineering practice.

Covers magnetism, electromagnetism, the application of Ohm's law to series and parallel circuits, power measurements, practical applications of Kirchhoff's laws, inductance, etc.

Prerequisites: Algebra, elementary chemistry and physics. Students should consult the instructor as to these prerequisites.

### **Electrical engineering e2—Principles of direct current machinery.**

Lectures and laboratory. 3 points Spring Session. Mr. F. R. KELLER

7:30–9:10 p. m., Tuesday and Friday. Fee \$18

Designed to give the student a knowledge of the construction and characteristics of direct-current generators and motors.

Covers the theory of generators and motors. Laboratory work consists of experimental work with shunt and compound generators and shunt, series and compound motors.

Prerequisite: Electrical engineering e1.

NOTE. A deposit of \$10 to cover possible breakage is required of students taking Electrical engineering e2.

**Electrical engineering e3—Elements of alternating currents.** Lectures. 3 points Winter Session. Professor F. W. HEHRE

7:30–9:10 p. m., Monday and Thursday. Room 302 Engineering. Fee \$18

Designed to give the student a general knowledge of the principles of alternating currents. Covers voltage and current relations in series and parallel circuits, power and power factor, inductive and capacity reactance, single and polyphase alternating current generators and armature windings.

Prerequisites: Electrical engineering e1 and e2 or equivalent. Students not having credit for e1 and e2 should consult with the instructor as to these prerequisites.

**Electrical engineering e4—Principles of alternating current machinery.** Lectures and laboratory. 3 points Spring Session. Professor F. W. HEHRE

7:30–9:10 p. m., Monday and Thursday. Fee \$18

Designed to give the student a general knowledge of the construction and characteristics of alternating current machinery.

Considers the theory and operation of the principal types of alternating current machinery. Laboratory work consists of some experimental work with the alternator, transformer, induction and synchronous motors, rotary converter and the parallel operation of alternators.

Prerequisite: Electrical engineering e3.

NOTE. A deposit of \$10 to cover possible breakage is required of students taking Electrical engineering e4.

**Electrical engineering e5-6—Theory and operation of vacuum tubes and other high frequency apparatus.** 2 points each Session. Professor J. H. MORECROFT

7:30–9:20 p. m., Wednesday. Room 302 Engineering. Fee \$12 each Session

A review of advanced alternating current theory will take up the first part of the course; the characteristics of circuits such as are used in radio telegraphy and telephony will be treated in detail, numerous problems being given to illustrate the conclusions reached theoretically. Emphasis will be laid upon the limitations of the ordinary formulæ when used in high frequency calculations.

The vacuum tube will be treated as completely as possible, its functions as detector, amplifier, and power generator being examined theoretically and in the laboratory. A course of about twelve experiments will parallel the lecture work; the experiments will embrace use of tubes, wave-meters, and other high frequency apparatus.

Prerequisites: The course is intended for those who have already had a thorough training in ordinary alternating current theory and measurements; enrolment only after personal interview with instructor in charge of the work.

### *Mechanical Drafting*

**Drafting e1-2—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points each Session. Professor T. H. HARRINGTON and assistant

7:20–10 p. m., Tuesday and Friday. Room 601 Engineering. Fee \$12 each Session

This course is the equivalent of Drafting 1-2 given to college students looking forward to the new advanced course in engineering.

It should, if possible, be taken in conjunction with Drafting e3-4.

The topics covered will be: the use of instruments; geometrical drafting; lettering; orthographic projection; topographical drafting; elementary working drawings.

\*Students will be required to furnish their own drafting instruments and materials.

**Drafting e1a—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points Winter Session. Professor T. H. HARRINGTON and assistant

7:20–10 p. m., Tuesday and Friday. Room 601 Engineering. Fee \$12

Identical with Drafting e2, but given in the Winter Session.

For description see Drafting e1–2 above.

**Drafting e2a—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points Spring Session. Professor T. H. HARRINGTON and assistant

7:20–10 p. m., Tuesday and Friday. Fee \$12

Drafting e1 repeated in the Spring Session for students entering in February.

For description see Drafting e1–2 above.

**Drafting e3–4—Descriptive geometry.** 2 hours' lectures per week. Credit I, V. 2 points each Session. Professor T. H. HARRINGTON

6:30–7:20 p. m., Tuesday and Friday. Room 307 Engineering. Fee \$12 each Session

This course will cover elementary problems relating to the point, right line, and plane; generation and classification of lines and surfaces; tangent planes to surfaces of single and double curvature; intersection of surfaces by planes; development of single curved surfaces; intersection of single curved surfaces. If possible, this course should be taken in conjunction with Drafting e1–2.

**Drafting e6, e7, e8—Graphics, engineering, and structural drafting.** 3 hours' drafting room work per week. 1 point for each course. Professor T. H. HARRINGTON

7:20–10:00 p. m., Tuesday or Friday. Room 601 Engineering. Fee \$6 for each course

These courses are identical with Drafting 6, 7, and 8, and are open only to students in the Schools of Mines, Engineering, and Chemistry.

**Drafting e8a—Structural drafting.\*** 6 hours' drafting-room work per week. 2 points Spring Session. Professor T. H. HARRINGTON

7:20–10 p. m., Tuesday and Friday. Fee \$12

This course includes methods used in framing and detailing in structural work, standard connections, beams, columns, plate girders and roof trusses.

Prerequisite: Elements of mechanical drafting.

### *Structural Mechanics*

NOTE. The following courses in structural mechanics are intended only for men engaged in practical work. They do not correspond to day courses and no university credit is allowed for them. For specific courses in architecture, especially in building materials, see page 22 and following.

**Structural mechanics eX1–X2—Elements and applications of algebra and trigonometry.** 2 points each Session. Mr. R. F. CLARK

6:10–7 p. m., Monday and Thursday. Room 302 Engineering. Fee \$12 each Session

The aim of this course is twofold: first, give to the student beginning the study of structural mechanics a clear understanding of the mathematics necessary for further study of the subject; second, to fit him to handle his present practical problems with greater facility.

\*Students will be required to furnish their own drafting instruments and materials.



The work of the Winter Session will consist of a drill in the principles and applications of elementary algebra, through quadratics, and including graphic methods. In the Spring Session there will be given a course in plane trigonometry and its application to problems of a practical nature. A thorough drill in the use of logarithms and the slide rule will be included. Students are urged to present for class discussion problems arising in their work.

**Structural mechanics eZ1—Elements of coplanar statics.** 3 points Winter Session. Professor C. H. BURNSIDE  
6:10-7 p. m., Tuesday and Thursday. Room 510 Fayerweather. Fee \$18

Algebraic and graphic methods are used in parallel; composition and resolution of forces; principles of equilibrium; determination of stresses in simple jointed frames, such as trusses and cranes; centers of gravity and centroids.

Prerequisite: Course eX1-X2, or its equivalent.

Text-book: Maurer's *Technical Mechanics*, third edition.

**Structural mechanics eZ2—Elements of mechanics of materials.** 3 points Spring Session. Professor C. H. BURNSIDE  
6:10-7: p. m., Tuesday and Thursday. Fee \$18

Continuation of Course eZ1. Moments of inertia and radii of gyration of plane areas, built-up beam and column sections; direct tension, compression and shear; strength of beams, columns and riveted joints; deflection of beams.

Prerequisite: Course eZ1.

Text-book: Merriman's *Mechanics of Materials*.

## DRAWING (See p. 25)

## ENGLISH

For advice in regard to courses designated English A, students should consult Mr. D. L. CLARK, Room 710 Journalism Building, and in regard to courses in preparatory English, Mr. D. B. DUNCAN, Room 711 Journalism Building.

### *Collegiate Courses in Composition*

**English eA1-A2—English composition.** Lectures, themes, and conferences. Credit I, IV. 3 points each Session. Fee \$18 each Session

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 603 Journalism. Mr. D. L. CLARK

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 603 Journalism. Mr. D. L. CLARK

Section 3—3:10-4:25 p. m., Monday and Thursday. Room 605 Journalism. Dr. DOROTHY BREWSTER

Section 4—3:10-4:25 p. m., Tuesday and Friday. Room 605 Journalism. Mr. M. M. HOOVER

Section 5—3:10-4:25 p. m., Monday and Thursday. Room 510 Fayerweather. Mr. G. H. MULLIN

Section 6—3:10-4:25 p. m., Tuesday and Friday. Room 611 Journalism. Dr. R. TAYLOR



Section 7—4:30-5:45 p. m., Monday and Thursday. Room 605 Journalism. Dr. DOROTHY BREWSTER

Section 8—7-8:15 p. m., Monday and Thursday. Room 503 Hamilton. Dr. S. L. WOLFF

Section 9—7-8:15 p. m., Tuesday and Friday. Room 503 Hamilton. Dr. R. TAYLOR

This course corresponds to English A in Columbia College. It is planned for students who have had four years of high school English or the equivalent. Students are expected to confer regularly with the instructor at times to be appointed within the conference period immediately following each class.

**English eA3-A4—English composition.** Lectures, themes, and conferences. Credit I, IV, if taken both Sessions. 1½ points each Session. Dr. S. L. WOLFF  
9-10:15 a. m., Saturday. Room 707 Journalism. Fee \$9 each Session

This course is equivalent to one-half of English A. It is offered for teachers and students who desire to gain a knowledge of the principles of rhetoric and English composition as they are now taught in the colleges.

Two one-page themes or one three-page theme a week will be called for. Students are expected to confer regularly with the instructor at times to be appointed within the conference period, 10:15-10:45 a. m. No other engagements should be made for this half-hour.

**English eA8—English composition.** Lectures, themes, and conferences. Credit I, IV. 3 points Spring Session. Fee \$18

Section 1—3:10-4:25 p. m., Tuesday and Friday. Mr. G. H. MULLIN

Section 2—3:10-4:25 p. m., Monday and Thursday. Dr. R. TAYLOR

Section 3—3:10-4:25 p. m., Tuesday and Friday. Dr. R. TAYLOR

Section 4—3:10-4:25 p. m., Monday and Thursday. Mr. G. H. MULLIN

Section 5—3:10-4:25 p. m., Tuesday and Friday. Mr. M. M. HOOVER

Section 6—7-8:15 p. m., Tuesday and Friday. Mr. D. L. CLARK

Course eA1 given in the Spring Session for new students.

**English eA9—English composition.** Lectures, themes, and conferences. Credit I, IV. 3 points Winter Session. Fee \$18

Section 1—3:10-4:25 p. m., Tuesday and Friday. Room 512 Journalism. Mr. G. H. MULLIN

Section 2—3:10-4:25 p. m., Monday and Thursday. Room 512 Journalism. Dr. R. TAYLOR

Section 3—7-8:15 p. m., Tuesday and Friday. Room 507 Hamilton. Mr. D. L. CLARK

Course eA2 given in the Winter Session for students who have already had English eA1 or eA8 or the equivalent.

### *Special Courses in Writing*

No entrance examinations are required for admission to any of the following classes, but prospective students are expected to satisfy the individual instructors of their ability to profit by the course in question. New students intending to register for any of these courses should send to the Office of Extension Teaching, not later than September 20, a story, sketch, or article of about 1,500 words, together with a letter of application for admission to a specified class.

**English e1-2—Advanced composition.** Magazine articles. Credit I, IV. 3 points each Session. Mr. D. L. CLARK  
7-8:15 p. m., Monday and Thursday. Room 603 Journalism. Fee \$18 each Session

This course will aim at teaching the composition of all types of writing that appear in the modern magazine, excepting fiction, drama and poetry. It is designed for the training of professional writers, but other students of ability may elect it with profit. There will be much actual composition both oral and written, and frequent individual conferences with the instructor. Able students desiring assistance in the solution of their special problems will not be bound to a fixed program.

Since admission to this class is granted only after personal consultation with the instructor, and after he has had an opportunity to examine specimens of the applicant's written work, it is desirable that candidates should write him at Columbia University before September 20, submitting written matter of not less than five-hundred words and a somewhat detailed account of their previous training.

**English e1a-2a—English composition.** Advanced course. Lectures, themes and theme criticism. Credit I, IV. 1½ points each Session. Dr. S. L. WOLFF  
11 a. m.—12:15 p. m., Saturday. Room 611 Journalism. Fee \$9 each Session

Open to students who have passed English A with high standing or to special students of maturity. This course presumes a knowledge of formal rhetoric and training in the essentials of composition, correctness and precision. From two to four pages of manuscript (250-500 words) are required each week.

**English e1b-2b—The short story.** Theory of fiction writing. Lectures, themes, and criticism. 4 points each Session. Fee \$24 each Session. Miss HELEN R. HULL

Section 1—3:10-4:25 p. m., Monday. Room 408 Avery

Section 2—7-8:15 p. m., Monday. Room 610 Journalism

A course for students who wish to write fiction and for those who wish to develop critical appreciation of narrative writing. A study of the essentials of narration; work upon characterization in fiction; the general necessities of the short story. Consideration of current fiction. A practical course in writing with criticism and class discussion.

**English e1c-2c—The short story.** Advanced course. English composition. Theory of fiction writing. 4 points each Session. Fee \$24 each Session. Dr. DOROTHY SCARBOROUGH

Section 1—9:30-10:45 a. m., Saturday. Room 712 Journalism

Section 2—3:10-4:25 p. m., Wednesday. Room 713 Journalism

A continuation of English e1b-2b. Story writing studied from the point of the literary critic and of the writer. Details of construction will be investigated and the student called upon to contrive plots. This course, which emphasizes the study of plot, is open to those who have completed or are taking Course 1b-2b, or to those who submit during the first week a sketch or story of not more than 5000 words as evidence of competency; individual conferences.

**English e1d-2d—The short story.** Second advanced course. 4 points each Session. Dr. DOROTHY SCARBOROUGH

8:20-9:35 p. m., Tuesday. Room 611 Journalism. Fee \$24 each Session

Students should consult the instructor at the regular class hour before registration. This course is open only to the following students: those who have done promising work in English e1c-2c; those who have not completed Course e1c-2c but submit at the outset a story of merit; and those graduate students specializing in English composition who wish advanced training in theory and criticism.

**English e1f-2f—Advanced short story writing.** 6 points each Session.  
Professor BLANCHE C. WILLIAMS

11 a. m.—12:15 p. m., Saturday. Room 512 Journalism. Fee \$36 each Session

Lectures, written work, conferences. In order to secure admission, applicants should write to the instructor before September 20, giving a detailed account of their previous training, and submitting a story as evidence of ability to profit from the course. In most cases registration will be limited to students who have completed the preceding courses.

**English e3a-4a—Dramatic composition.** 4 points each Session. Fee \$24 each Session

Section 1—11:10 a. m.—12:25 p. m., Saturday. Room 507 Journalism. Mr. H. H. HUGHES

Section 2—8:20-9:35 p. m., Friday. Room 507 Journalism. Miss MINOR H. LATHAM

This course is designed for students desiring to write plays. In the beginning of the course each student will be required to submit the scenario of a play to be written during the year. These scenarios will be criticized with reference to their suitability for the stage, and the manuscripts prepared from them will be analyzed from the point of view of the dramatist. Specific technical problems will be discussed in class as they come up in the course of the work. Representative recent and current plays will be taken up and analyzed with a view to ascertaining the principles underlying their construction and the causes of their success or failure. Constant practice in plot construction and the preparation of scenarios will be given. In so far as possible the work of the course will be adapted to meet the specific requirements of the individual students.

### *Collegiate Courses in Literature*

**English eB1-B2—English literature.** Lectures, themes, and conferences. Credit I, IV. 2 points each Session. Dr. S. L. WOLFF

8:45-9:35 p. m., Monday and Thursday. Room 503 Hamilton. Fee \$12 each Session

This course corresponds to English B in Columbia College. It consists in part of the careful and appreciative study of portions of the works of Chaucer, Spenser, Milton, Pope, and Wordsworth.

**English eB5-B6—Survey of English literature.** Credit I, IV. 3 points each Session. Dr. R. TAYLOR

3:10-4:25 p. m., Monday and Thursday. Room 713 Journalism. Fee \$18 each Session

This course is designed primarily as a survey course in English literature. It aims to acquaint the student with the most important writings of the major authors in each period of the history of English literature.

**English e11a-12a—Public speaking.** Credit I, IV. 2 points each Session. Fee \$12 each Session. Mr. E. M. HALLIDAY

Section 1—7:30-9:10 p. m., Wednesday. Room 206 Journalism

Section 2—7:30-9:10 p. m., Friday. Room 206 Journalism

This course will deal with public address. Its aim is to give practical training to men and women of whom speaking is demanded in their profession.

Winter Session: Three-minute extemporaneous addresses on topics of current interest, supplemented by drill in breathing, articulation, gesture and reading aloud.

Spring Session: Exposition, argumentation, after-dinner speaking; how to stir the emotions and move to action.



**English e13-14—Elementary elocution.** Credit I, IV. 2 points each Session. Fee \$12 each Session. Mrs. ESTELLE H. DAVIS

Section 1—9:10-10:50 a. m., Saturday. Room 301 Mines

Section 2—4-5:40 p. m., Wednesday. Room 301 Mines

Winter Session—The mechanics of voice and speech; breathing exercises, vocal gymnastics, and a practical study of English phonetics. The correction of faults in tone (nasality, throatiness, breathiness, etc.), and localisms and sluggishness in speech.

Spring Session—A study of the principles underlying good reading aloud with special reference to phrasing, inflection, and emphasis.

Drill and individual practice at each lesson.

**English e13a-14a—Advanced elocution.** 2 points each Session. Mrs. ESTELLE H. DAVIS

11 a. m.-12:40 p. m., Saturday. Room 301 Mines. Fee \$12 each Session

Winter Session—A study of the emotional element in vocal expression with special reference to utterance, quality of voice, force, pitch, and time.

Spring Session—Practical application of the principles studied during the Winter Session to the oral presentation of types of literature such as the oration, the essay, the lyric, and dramatic narrative in prose and verse.

Prerequisite: English e13-14 or its equivalent.

**English e15-16—English prosody.** Elementary course. 2 points each Session. Mr. B. HOOKER

8:20-10 p. m., Thursday. Room 609 Journalism. Fee \$12 each Session

A technical study of rhythm and meter in English verse, and of the means by which its various effects are produced; intended not only for those engaged in the composition of original verse, but also for those who desire to achieve a richer appreciation of poetry through the understanding of its technical methods. Illustrations will be drawn from contemporary work as well as from that of accepted masters; attention will be given to the character of different verse-forms, as especially suited to the expression of certain types of thought. This course will run throughout the year; no one will be admitted after the beginning of the course without passing an examination in the work already covered.

**English e17-18—Modern literature, English and foreign.** Credit I, IV. 2 points each Session. Professor H. R. STEEVES

6:45-7:35 p. m., Monday and Thursday. Room 602 Hamilton. Fee \$12 each Session

This course is a general survey of the principal current literary types, tracing their characteristics from the influences prevalent in the Victorian period and giving attention to foreign artistic sources and parallels. The course requires extended and rapid outside reading of a weekly average of possibly three hundred or four hundred pages. The required reading can generally be found in the branch libraries of the New York Public Library.

**English e21-22—English literature from 1780-1830.** Credit I, IV. 2 points each Session. Professor F. A. PATTERSON

4:20-6 p. m., Wednesday. Room 408 Avery. Fee \$12 each Session

This course will deal with English romanticism beginning with Cowper. After tracing the first signs of revolt against eighteenth century thought and ideals, it will treat of the new spirit as it expressed itself in the works of the poets and prose writers of the early part of the nineteenth century. While the course will include the work of men not especially well known, it will aim to embrace in considerable detail the poetry of Wordsworth, Shelley, Keats, and Byron. The work will be conducted by means of assigned readings and discussions.

**English e23-24—English literature from 1830-1890.** Credit I, IV. 2 points each Session. Professor J. H. H. LYON

7:30-9:10 Wednesday. Room 503 Hamilton. Fee \$12 each Session



A study of Victorian literature, beginning with Carlyle. In the Winter Session the work will center around Tennyson; in the Spring Session around Browning. Other poets, such as Arnold, Morris, Rossetti, and Swinburne, will be studied. The course will be conducted by means of lectures, assigned readings, and discussions.

**English e39-40—The English novel.** Credit I, IV. 2 points each Session.

Dr. DOROTHY BREWSTER

11 a. m.—12:40 p. m., Saturday. Room 605 Journalism. Fee \$12 each Session

Beginning with Samuel Richardson, the course will trace the development of the novel down to the present day, with due attention to the influence of social and economic changes. The work of the Winter Session will include the early Victorian novel. In the Spring Session, the work will center around Meredith and Hardy. The work of a few of the later novelists will also be considered.

The lectures will be supplemented by assigned readings, reports, and discussions.

**English e41a-42a—Contemporary dramatic literature.** 3 points each Session. Mr. CLAYTON HAMILTON

10-11:40 a. m., Saturday. Room 612 Journalism. Fee \$18 each Session

In this course study is made of representative works of the leading modern dramatists from Victor Hugo to Sir Arthur Pinero. Special attention is devoted to the evolution of contemporary stagecraft. The best new plays presented during the current theater season in New York are also analyzed from the point of view of the dramatic critic. The course is especially helpful to students who desire subsequently to write plays or to write dramatic criticism; it brings the actual theater of today within the reach of academic study.

### *Comparative Literature*

**Comparative literature e3-4—Masterpieces of European literature**  
Credit I, IV. 3 points each Session. Professor J. H. H. LYON

4:30-5:45 p. m., Tuesday and Friday. Room 408 Avery. Fee \$18 each Session

This course is designed to give students an intimate acquaintance with those works of literature which are called World Masterpieces. The method followed will be primarily according to types; but the historical importance of each work studied will be made evident. Rapid outside reading is required of books generally found in all public libraries. Lectures, discussions, and reports.

**Comparative literature e5-6—Greek and Latin literature in English translation.** Credit I, IV. 2 points each Session. Professor KATHARINE C. REILEY and Mrs. ELLINOR TEN BROECK ENDICOTT

4:30-6:10 p. m., Monday. Room 610 Journalism. Fee \$12 each Session

The course will be devoted to the study and interpretation through English translation of the masterpieces of Greek and Latin literature and their formative influence upon European thought and letters.

**Comparative literature e7-8—Modern European literature.** Lectures, readings, and discussions. Credit I, IV. 2 points each Session. Dr. DOROTHY BREWSTER

4:30-5:45 p. m., Wednesday. Room 707 Journalism. Fee \$12 each Session

The course will deal during the Winter Session with contemporary drama and fiction of England and France; during the Spring Session with that of Scandinavia and Germany, and especially with modern Russian fiction.

**Comparative literature e9—Modern European literature.** Lectures, readings, and discussions. Credit I, IV. 2 points Winter Session. Dr. DOROTHY BREWSTER

3:10-4:25 p. m., Wednesday. Room 707 Journalism. Fee \$12

This course considers that part of contemporary literature which is covered in the Spring Session of the preceding course. It will deal with the modern literature of Scandinavia, Germany, and Russia. The works of Gogol, Tolstoy, Dostoievsky, Turgenev, Chekhov, and others, will be discussed.

Comparative literature e8 given in the Winter Session.

**Comparative literature e11-12—Modern poetry.** 2 points each Session.  
Miss HELEN R. HULL

3:10-4:25 p. m., Thursday. Room 609 Journalism. Fee \$12 each Session

This course deals with modern poetry of Europe and America. It includes a study of the development of present tendencies in poetic conceptions with some analysis of the social background of which the poetry is an expression, and a study of modern poetic forms. The course is conducted by means of assigned readings, lectures, and class discussions.

### *Graduate Courses*

**English e205—Principles of English usage.** Credit II. 3 points Winter session. Professor G. P. KRAPP

10 a. m.-12 m., Saturday. Room 610 Philosophy. Fee \$18

Consideration will be given in this course mainly to the principles under which instances of divided use in standard modern English may be grouped.

**English e206—Standard English pronunciation, with special reference to the conditions of American speech.** Credit II. 3 points Spring Session.  
Professor G. P. KRAPP

10 a. m.-12 m., Saturday. Fee \$18

**English e233-234—English literature in the eighteenth century.** Credit II. 3 points each Session. Professor W. P. TRENT

5:10-6 p. m., Tuesday and Friday. Room 307 Philosophy. Fee \$18 each Session

Covers the development of English literature during the eighteenth century, more especially of the poetry. Emphasis is laid on Defoe, Swift, Pope, Thomson, Gray, Collins, Johnson, Cowper, and Burns, but attention is also paid to many minor writers.

**English e237-238—English literature, 1832-1880.** Credit II. 3 points each Session. Professor A. H. THORNDIKE

5:10-6 p. m., Monday and Wednesday. Room 307 Philosophy. Fee \$18 each Session

Especial attention will be paid to the early Victorian writers and to the relations of literature and the age of industrialism.

The attention of students is also called to Greek 203-204, p. 63; also to Latin 203-204, p. 70

### *Preparatory Courses*

**English eV1-V2—The elements of the English language with instruction in speaking, reading, and writing.** 2 points each Session. Miss HELEN E. DILLER

5-5:50 p. m., Wednesday and Friday. Room 601 Hamilton. Fee \$12 each Session

This course is intended principally for educated foreigners who have some knowledge of the English language. Students study elementary principles of English grammar and make brief oral reports on assigned topics. Conversation and reading aloud, with special attention to pronunciation, form a part of every lesson. Some writing and correction are done in class, and one written theme is expected weekly.

**English eW1—English grammar.** 3 points Winter Session. Fee \$18

Section 1—1:45–3:00 p. m., Monday and Thursday. Room 612 Journalism.  
Miss HELEN E. DILLER

Section 2—7:00–8:15 p. m., Monday and Thursday. Room 612 Journalism.  
Mr. D. B. DUNCAN

Section 3—8:20–9:35 p. m., Monday and Thursday. Room 612 Journalism.  
Mr. M. M. HOOVER

This course is intended for mature students who desire to acquire a thorough knowledge of the elementary principles of English grammar. After a rapid review of the parts of speech and their modifications, a detailed treatment of word elements, phrase elements, and clause elements and their relations in sentences will be given. Much time will be devoted to the analysis and synthesis of different types of sentences. Written work will be required for each session. Punctuation will be regarded as a system of points to denote grammatical relations, and thus considerable attention will be given to this subject.

This course is recognized as a credit course for promotion licenses by the Board of Education. Students will be expected to confer regularly with the instructor at such times as he may designate.

Students who contemplate taking college entrance English, either English eX1–X2 or eY1–Y2, should have completed this course or its equivalent.

Text-book: Blount and Northrup's *Elementary English Grammar*.

**English eW2—English composition.** 3 points Spring Session. Fee \$18

Section 1—1:45–3:00 p. m., Monday and Thursday. Miss HELEN E. DILLER

Section 2—7:00–8:15 p. m., Monday and Thursday. Mr. D. B. DUNCAN

Section 3—8:20–9:35 p. m., Monday and Thursday. Mr. M. M. HOOVER

An elementary course in English composition especially planned for those who wish to gain power in writing through practice. The rhetorical essentials of narration, description, exposition, and argumentation will be discussed. Composition subjects will be drawn from the students' own experiences and from contemporary life rather than from literature. Weekly themes will be required, and by means of these the students are expected to master, so far as time permits, the technique of simple prose expression.

Students will be required to consult regularly with the instructor at such times as he may designate. This course, with the first half year, English eW1, furnishes preparation for English eX1–X2 and English eY1–Y2.

Text-books: Woolley's *Handbook of Composition* and Brook's *English Composition*, Book II.

**English eW4—English grammar.** 3 points Spring Session. Mr. D. B. DUNCAN

8:20–9:35 p. m. Monday and Thursday. Fee \$18

Course eW1 repeated in the Spring Session.

**English eW5—English composition.** 3 points Winter Session. Mr. D. B. DUNCAN

8:20–9:35 p. m., Monday and Thursday. Room 610 Journalism. Fee \$18

Course eW2 given in the Winter Session.

**English eX1–X2—English composition and literary readings.** Reading of classics, lectures, oral reports, class discussions, compositions, and written tests. 3 points each Session. Fee \$18 each Session

Section 1—3:10–4:25 p. m., Monday and Thursday. Room 612 Journalism.  
Mr. D. B. DUNCAN



Section 2—7:00-8:10 p. m., Tuesday and Friday. Room 707 Journalism.

Mr. M. M. HOOVER

This course is planned to give students an appreciation of literature and facility in composition. The work done will be in actual sequence to that done in English eW1 and English eW2. In addition to the reading of masterpieces in prose and poetry, considerable attention will be given to the planning of compositions and to theme writing. The masterpieces studied will be analyzed in such a way as to show how to read and how to use these masterpieces to develop power in composition writing. The course will meet the needs of people who, while not desiring credit for entrance to college, desire guidance in reading, speaking, and writing. The successful completion of this course will count, in part, toward the removal of entrance conditions in English 1 and English 2. Students will be required to confer regularly with the instructor at such times as he may designate.

Prerequisite: A knowledge of elementary English grammar such as may be acquired in English eW1 or English eW4.

Text-books: Woolley's *Handbook of Composition* and ten classics selected from the lists prescribed by the Committee on Uniform Entrance Requirements.

**English eY1-Y2—Literature and composition.** Themes, lectures, class discussions, and tests. 3 points each Session. Fee \$18 each Session

Section 1—3:10-4:25 p. m., Tuesday and Friday. Room 612 Journalism. Mr.

D. B. DUNCAN

Section 2—7:30-10:00 p. m., Wednesday. Room 707 Journalism. Mr. M. M.

HOOVER

This course is planned for three classes of people: (1) those who wish to gain adequate preparation for various college courses in English; (2) mature people who wish to gain accuracy in expression, power in writing, and general culture; and (3) students who wish to prepare themselves to pass the examinations of the College Entrance Examination Board.

The work will consist of a detailed study of four classics, a survey of English literature, and the preparation of many outlines and themes. Emphasis will be laid upon adequacy of information and accuracy of expression. The completion of this course with a grade of B will remove entrance conditions in English 2 in Columbia College. Students will be required to confer regularly with the instructor at such times as he may designate. Students already registered in this course who show obvious inability to carry the work will be transferred to Course eX1-X2.

Prerequisite: eX1-X2 or its equivalent (three years of high school English).

Text-books: Woolley's *Handbook of Composition*, Long's *English Literature*, Mitchell and Carpenter's *Exposition in School-Room Practice*, and four classics selected from the list prescribed by the Committee on Uniform Entrance Requirements.

**English eZ1-Z2—English spelling and vocabulary.** 1 point each Session. Fee \$6 each Session. Messrs. D. B. DUNCAN and M. M. HOOVER

Section 1—9-9:50 a. m., Monday and Wednesday. Room 707 Journalism

Section 2—4:30-5:20 p. m., Wednesday and Friday. Room 612 Journalism

Section 3—6:10-7 p. m., Monday and Thursday. Room 612 Journalism

This course is designed for mature students who spell badly. An effort will be made to teach spelling through the threefold appeal to the eye, the ear, and the touch. While considerable time will be devoted to phonics, syllabication and rules of orthography, much more time will be given to actual spelling. The aim will be to discover and correct the deficiencies of the individual student. Attention will be given to words in common use and words commonly misspelled rather than to unfamiliar and technical words. Each student will be required to keep an alphabetical list of all words he misspells.

Text-book: Eldridge's *Business Speller and Vocabulary*.

**Business English e1-2—Business English and commercial correspondence.** 3 points each Session. Fee \$18 each Session. Mr. D. B. DUNCAN

Section 1—2-3 p. m., Tuesday and Friday. Room 612 Journalism



Section 2—7:30-9:20 p. m., Wednesday. Room 612 Journalism

Section 3—7:30-9:20 p. m., Tuesday. Room 612 Journalism

This course is intended for office assistants, private secretaries, and those who wish to become proficient in effective business communication. The aim is to teach how to use words in such a way as to make people act. The principles of literary composition will be applied to commercial correspondence. Business situations will be analyzed, letters classified into type forms, and the requisites of each class will be exemplified by many models. The psychology of advertising and the sales letter will be analyzed, and principles derived from this analysis will be applied in actual practice. The course will be not merely theoretical, but practical. Every student will be required to write several letters each week, and no one who has not sufficient time for such written work should take this course.

Special consideration will be given to letters of application, letters of complaint, sales letters, follow-up letters, and collection letters.

A prerequisite to this course is a knowledge of the principles of elementary English grammar.

## FINE ARTS

### [ Architecture e27—Ancient architecture.

The ancient architecture of Egypt, Assyria, Persia, Greece and Rome.

Will not be given in 1919-1920; will be offered in 1920-1921.]

### [ Architecture e28—Medieval architecture (to Gothic).

Will not be given in 1919-1920; will be offered in 1920-1921.]

### Architecture e29—Medieval and Renaissance architecture (beginning with Gothic). Credit I. 2 points Winter Session

Gothic Architecture in France, England, Italy, Germany, Spain, The Netherlands; analytical and critical discussion of historic development, characteristics and chief examples, including the beginning of the Renaissance as seen in Italy and France.

[ Will not be given in 1919-1920; will be offered in 1920-1921.]

### Architecture e30—Renaissance and modern architecture. Credit I. 2 points Spring Session

The Architecture of the Renaissance in Italy, France, Germany, Spain, the Low Countries, and England; architecture of the nineteenth century in Europe; American Architecture; modern and contemporary developments and tendencies. Analytical and critical discussion of historical development and great examples of architecture since 1420.

[ Will not be given in 1919-1920; will be offered in 1920-1921.]

### Architecture e31-32—Ancient ornament. Credit I, V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Friday. Room 407 Avery. Fee \$12 each Session

General classifications; origins, primitive and savage ornament; the historic ornament of Egypt, Assyria, Persia, Greece and Rome, including Ægean, Cypriote, Phœnician and Etruscan ornament; the development of the styles, the common motives and patterns of both architectural ornament and the minor arts.

### Architecture e33-34—Medieval ornament. Credit I, V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Monday. Room 407 Avery. Fee \$12 each Session

The ornament of the early Christian, Byzantine, Romanesque, and Gothic styles both in architecture, and the minor arts; Moslem and Indian ornament; the development of styles, motives and patterns. Periodic drawings.

### [ Architecture e35-36—Modern ornament.

Will not be given in 1919-1920; will be offered in 1920-1921.]

**Fine arts e51a—The art of the Metropolitan Museum—sculpture and the decorative arts.** A study of the originals in the Museum. 2 points Winter Session. Fee \$12. No University fee. Dr. G. KRIEHN

Section 1—2:30–4:10 p. m., Friday. Metropolitan Museum

Section 2—10:30–12:10 p. m., Saturday. Metropolitan Museum

Section 3—3:15–4:55 p. m., Saturday. Metropolitan Museum. Begins October 11

Section 4—10:30 a. m.–12:10 p. m., Monday. Metropolitan Museum. Begins October 20

Section 4 will be given only if the other sections are filled

This course, combined with Fine arts e52a, offers a year's systematic study of the most important art objects in the Metropolitan Museum. It is an introductory course, designed to teach the appreciation of sculpture and the decorative arts, as practised in the great historic styles, and to outline briefly their history. Among the subjects treated, besides sculpture proper, will be ivories, enamels, ceramics, small bronzes, terracottas, furniture, tapestries, and other decorative arts. Opportunities for the study of these subjects, rivaled only by the best European collections, are offered in the recently opened galleries of classical art, the new J. P. Morgan memorial wing of decorative arts, the galleries of Egyptian art, the collection of Rodin sculptures, and in other departments. Special attention will be devoted to the needs of teachers and university students, for whom Section 2 is designed.

**Fine arts e52a—The art of the Metropolitan Museum—the paintings.** A study of the originals in the Museum. 2 points Spring Session. Fee \$12. No University fee. Dr. G. KRIEHN

Section 1—2:30–4:10 p. m., Friday. Metropolitan Museum

Section 2—10:30 a. m.–12:10 p. m., Saturday. Metropolitan Museum

Section 3—8:15–9:55 p. m., Saturday. Metropolitan Museum. If the Museum is closed Saturday evenings, Section 3 will meet Saturday, 3:15–4:55 p. m.

Section 4—10:30 a. m.–12:10 p. m., Monday. Metropolitan Museum. Begins February 16

Section 4 will be given only if the other sections are filled

Planned for all who wish to learn how to judge and enjoy painting. A continuation of the preceding course, but may be taken independently. While special attention will be given to the technical qualities of painting, its content will not be neglected. Each Session will be devoted to a school or to individual masters of painting; but the treatment will be in historic sequence, thus outlining the history of painting. Among the topics treated are Italian painting, both primitive and developed; the early Netherlandish and German schools; Flemish and Spanish masters; Dutch painting, with special emphasis on Rembrandt (Altman collection); the old English masters; French painting with emphasis on the Barbizon school (Vanderbilt collection); modern European painting; American painting, both early and contemporary. Students, teachers, and others wishing to take the examination should enrol, if possible, in Section 2, which is especially designed for them.

**Fine Arts e53-54—Outlines of art history.** 2 points each Session. Dr. G. KRIEHN

3–4:15 p. m., Monday. Metropolitan Museum. Fee \$12 each Session. No University fee

Requires fifteen students.

A general course, treating the great epochs of art in the western world from the appreciative as well as the historic point of view. The chief subjects are painting, sculpture, and architecture, with emphasis on that phase in which the age or people found its highest expression; in sculpture, for example, in ancient Greece; architecture and decoration during the Roman and medieval epochs, on the painting and sculpture of the Renaissance, and on

painting during the modern period. There will be special lectures on the great masters in whose works art culminated, such as: Michaelangelo, Raphael and Titian in Italy, Rubens and Van Dyck in Flanders, Hals and Rembrandt in Holland, Velazquez in Spain, and Rodin in France. During the nineteenth century, the emphasis will be placed on the painting of France and the United States. A full syllabus will be distributed, and the lectures will be illustrated with the stereopticon.

Use will be made of the important Museum Library, with its fine collection of reproductions of the great masters.

Begins October 13.

**The attention of students is also called to Greek 149, 150, p. 63**

## GEOGRAPHY

**Geography e25—Physical geography of the atmosphere and oceans.**

Lectures and laboratory work. Credit I, IV. 3 points Winter Session. Dr.

A. K. LOBECK

8:20-9:50 p. m., Monday and Thursday. Room 401 Schermerhorn. Fee \$18

The first part of this course consists of an introductory discussion of the earth as a globe; latitude, longitude, and time; methods of map projection; the geographic effects of the earth's rotation and revolution and of terrestrial magnetism. The major part of the time is devoted to consideration of the constitution, temperature, and pressure of the atmosphere; weather predictions and the making of weather maps; climatic provinces. In connection with the ocean the following topics will be considered: The composition and temperatures of ocean water; ocean currents and their effects on navigation, climate, and the distribution of food fishes; tides and their influence on harbors, navigation, and sewage disposal; wave action and its effect on shores and harbors.

Special attention will be paid to the needs of those engaged in, or looking forward to, the teaching of elementary physical geography.

**Geography e26—Physical geography of the lands.** Lectures and laboratory work. Credit I, IV. 3 points Spring Session. Dr. A. K. LOBECK

8:20-9:50 p. m., Monday and Thursday. Fee \$18

This course deals primarily with the origin and evolution of the surface features of the earth. The chief topics considered are: The work of rivers, glaciers, waves, and winds, and the evolution of the forms which they produce; the different types of plains, plateaus, mountains and volcanoes, and their stages of development under stream erosion; the representation of land forms by topographic maps, block diagrams and other methods of illustration.

As in Physical geography e25, special attention will be given to the needs of those members of the class who are engaged in, or looking forward to, the teaching of elementary physical geography.

**Business e9-10—Economic geography.** 2 points each Session. Mr. A. H. STOCKDER

7:30-9:10 p. m., Monday. Room 707 Journalism. Fee \$12 each Session

This course is concerned with a study of the leading industrial and commercial activities of the great nations, with especial reference to the United States. The physical conditions which influence the production of raw materials, the development of manufacturers, the laying out of routes of trade and the location of markets are first considered, and emphasis is then placed upon the production and distribution of the materials which enter into food, clothing, and shelter.

## GEOLOGY

**Geology e1—General geology.** A general introduction to the subject of geology. Lectures and laboratory work. Credit I, IV. 3 points Winter Session. Mr. F. K. MORRIS

8:20-10 p. m., Tuesday and Friday. Room 401 Schermerhorn. Fee \$18



This course covers an introduction to the common rocks, their structure, origin, and occurrence in nature; rock weathering and its products, geological activities of the air; the streams and the sea; characteristics and work of glaciers, volcanoes, and earthquakes.

The laboratory work consists of a study and identification of common rocks, drawing of profiles and structure sections, interpretation of topographical maps, etc. There will be several field trips on Saturday afternoons.

No prerequisite. Equivalent to Geology I in Columbia College. A knowledge of elementary chemistry is desirable.

Text-book: Chamberlin and Salisbury, *College Geology*.

**Geology e2—Historical geology.** The origin of the earth and its development—succession of plant and animal life. Lectures and laboratory. Credit I, IV. 3 points Spring Session. Dr. J. J. GALLOWAY

8:20–10 p. m., Tuesday and Friday. Fee \$18

This course deals with the origin of continents and ocean basins and their development during successive geologic periods, characteristic sections and their interpretations, study of important types of fossils as indication of geologic age; the glacial period and the antiquity of man; development of surface features or physiography.

The laboratory work consists of the study of maps, the making of sections, and the identification of fossils, followed by work with physiographic models. There will be several excursions on Saturday afternoons in the spring.

Prerequisite: Geology I or Geology e1 or s1.

Text-books: Chamberlin and Salisbury, *College Geology*; Grabau, *Syllabus of Historical Geology*; Pirsson and Schuchert, *Geology*.

**Geology e3—Lithology.** An introduction to the study of rock-forming minerals and rocks. Demonstration lectures and laboratory work. Credit I, IV. 3 points Winter Session. Mr. R. J. COLONY

7–8:15 p. m., Tuesday and Friday. Room 402 Schermerhorn. Fee \$18

The methods of determining minerals, especially rock-forming minerals; classification of rocks; laboratory practice with both minerals and rocks. The object is to attain facility in sight recognition and discrimination of these natural products, and mastering hand specimen determination and classification.

Text-book: Kemp's *Handbook of Rocks*.

**Geology e4—Elementary petrography.** An introduction to the study of rocks, from thin sections, with the microscope. Laboratory demonstration method of work. Credit I, V. 3 points Spring Session. Mr. R. J. COLONY

6:30–8:10 p. m., Tuesday and Friday. Fee \$18

Methods of mineral identification; structural differences and classification of rocks. A standard set of fifty rocks is used as the basis of this course and particular attention is given to forms of description.

Text-books: Luquer's *Minerals in Rock Sections* and Harker's *Petrology*.

**Geology e36—Meteorology and climatology.** Two lectures per week. Credit I, IV. 3 points Spring Session. Mr. E. M. LEHNERTS

7–8:15 p. m., Monday and Thursday. Fee \$18

The course is intended to include the principles of meteorology and the chief factors in the making of different climates with their effects on general development and human progress. Special attention will be given to the causes of weather change and the rules of forecasting.

**Geology e55—Features of American National Parks.** Two lectures per week. Credit I, IV. 3 points Winter Session. Mr. E. M. LEHNERTS

7–8:15 p. m., Monday and Thursday. Room 401 Schermerhorn. Fee \$18



A course in regional geography and physiography designed to disseminate a knowledge and understanding of the American National Parks: their location, area, scenery, climate, fauna and flora, accessibility, reasons for their preservation, and value to the nation.

The course is especially concerned with interpretation of the land forms of American scenery, as exemplified in these regions where they have attained their most attractive and instructive development. This training will enable the student to comprehend and appreciate not only the scenic wonders of our National Parks, but also the features of his home surroundings or those seen in his travels in other lands.

## GERMAN

**German eA1-A2—Elementary course.** Credit I, IV. 4 points each Session.  
Fee \$24 each Session

Section 1—4:30-5:55 p. m., Tuesday, Wednesday, and Friday. Room 713 Journalism. Mr. M. G. BACH

*Section 2 limited to men matriculated in Columbia College.*

Section 2—1:10-2 p. m., Monday, Wednesday, and Friday, and two hours to be arranged. Room 507 Hamilton. Professor F. W. J. HEUSER

This course familiarizes the beginner with the common vocabulary and the fundamental grammatical facts of the language so as to enable him to read easy German at sight. Reading forms part of the work from the beginning, together with grammar study, easy exercises in composition, and a considerable amount of colloquial practice in the phrases of everyday life. Although this course is intended for beginners it may be taken with profit by those who have some previous knowledge of the language, but are deficient in grammar. Students entering in February should take Course eA3. For Course eA1 no previous knowledge of German is required.

The entire course completes the college entrance requirement (*a* and *x*) in elementary German.

**German eA8—Elementary course.** Credit I, IV. 4 points Spring Session.  
Mr. O. P. SCHINNERER

7-8:25 p. m., Monday, Wednesday, and Thursday. Fee \$24

Equivalent to German eA1, but given in the Spring Session for students who enter at that time. This course should be followed by German eA9 (equivalent to German eA2). For description see German eA1-A2 above.

**German eA9—Elementary course.** Credit I, IV. 4 points Winter Session.  
Mr. O. P. SCHINNERER

7-8:25 p. m., Monday, Wednesday, and Thursday. Room 402 Hamilton.  
Fee \$24

Equivalent to German eA2, but given in the Winter Session. For description see German eA1-A2 above.

**German eB1-B2—Intermediate course.** Credit I, IV. 4 points each Session. Professor H. H. L. SCHULZE

4:30-5:55 p. m., Monday, Wednesday, and Thursday. Room 408 Hamilton.  
Fee \$24 each Session

This course is intended for students who have satisfied the college entrance requirement in elementary German or have taken Course eA1-A2 or an equivalent. Course eB2 completes the requirement in intermediate German (*b* and *y*) for college entrance or for a degree.

The work of this course includes the reading (partly at sight), of moderately difficult prose and verse by standard modern and classical authors; grammatical instruction, beginning with a rapid review of the elements and embracing the fundamental principles of syntax and word-formation; exercises in composition and free reproduction, oral and written, with consider-

able colloquial practice. The texts studied will be selected with reference to variety of style and vocabulary and will include Freytag's *Die Journalisten*, Heine's *Harzreise*, and Schiller's *Wilhelm Tell*.

Prerequisite: Elementary entrance, German eA2 or an equivalent.

**German eB4—Intermediate course.** Credit I, IV. 4 points Spring Session.

Dr. G. A. BETZ

4:30–5:55 p. m., Monday, Wednesday, and Thursday. Fee \$24

Equivalent to eB1, but given in the Spring Session.

**German eB5—Intermediate course.** Credit I, IV. 4 points Winter Session.

Dr. G. A. BETZ

4:30–5:55 p. m., Monday, Wednesday, and Thursday. Room 406 Hamilton.

Fee \$24

Equivalent to eB2, but given in the Winter Session.

**German eE4—Readings in science.** Credit I. 3 points Spring Session.

Mr. O. P. SCHINNERER

4:30–5:45 p. m., Monday and Thursday. Fee \$18

Equivalent to Course E1 of the Winter Session (for description see Columbia College Announcement).

Prerequisite: eB2.

**German eE5—Readings in science.** Credit I. 3 points Winter Session.

Mr. O. P. SCHINNERER

4:30–5:45 p. m., Monday and Thursday. Room 402 Hamilton. Fee \$18

Intended to follow German eE4. Equivalent to E2 of the Spring Session.

**German eJ1-J2—Readings in newspapers and magazines.** Credit I, IV.

3 points each Session. Dr. G. A. BETZ

7–8:15 p. m., Tuesday and Friday. Room 402 Hamilton. Fee \$18 each Session

This course is intended for students who look forward to entering the School of Journalism; also for those who wish to acquire facility in reading as preparation for using the language in the study of history, economics or politics rather than as an introduction to the study of German or other literature (see German e5a–6a). The work includes a review of German syntax, with some practice in writing and speaking (see also German e11–12).

Prerequisite: Intermediate entrance, German eB2, or an equivalent.

**German e11-12—German writing and speaking.** Credit I, IV. 2 points

each Session. Professor W. A. BRAUN

10:50 a. m.–12:30 p. m., Saturday. Room 308 Philosophy. Fee \$12 each Session

An advanced practice course, but with a distinctly literary content. It presupposes a good reading knowledge and fair ability to understand the spoken language. This course will be conducted wholly in German. The conversation will be upon topics chosen from the field of literature, daily life, and current events. The composition work will consist in the rendering of outlines of the literature read and in the preparation of original themes.

**German e101-102—History of German literature.** Winter Session from 800 to 1500 A.D.; Spring Session from 1500 to 1800 A.D. Credit II. 3 points each Session. Professor W. A. BRAUN

9–10:40 a. m., Saturday. Room 508 Philosophy. Fee \$18 each Session

The course consists of lectures, readings from Thomas' *Anthology*, and essays or reports on assigned topics. The lectures introduce the student to the more important writers and writings and aim to give a clear, though very general, idea of the character of epochs, and the growth and decay of literary tendencies.

**Properly qualified Extension students will also be admitted to the following courses:**

**German 105—German literature in the nineteenth century;** from the rise of the Romantic School to the revolution of 1848. Credit II. 3 points Winter Session. Professor F. W. J. HEUSER

4:10-5 p. m., Monday and Wednesday. Room 514 Philosophy. Fee \$18

**German 106—Modern and contemporary German drama** since the revolution of 1848. Credit II. 3 points Spring Session. Professor F. W. J. HEUSER

4:10-5 p. m., Monday and Wednesday. Fee \$18

## GOVERNMENT

**Government e1-2—American government.** Credit I, IV. 3 points each Session. Fee \$18 each Session. Dr. R. S. BOOTS and Mr. E. D. GRAPER

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 511 Hamilton

Section 2—7-8:15 p. m. Monday and Thursday. Room 511 Hamilton

A general survey of the whole field, based largely on Beard's *American Government and Politics* (edition of 1914), and designed both for those who wish to teach the subject in the schools and for those who wish to gain an insight into the responsibilities of citizenship. Attention will be confined to national government in the Winter Session; to state, municipal, and local government in the Spring Session.

Identical with Government 1-2 in Columbia College.

**Government e15—American political parties and issues.** Credit I, IV. 3 points Winter Session. Mr. A. W. MACMAHON

3:10-4:25 p. m., Wednesday and Friday. Room 511 Hamilton. Fee \$18

A study of contemporary party issues and party organization.

Prerequisite: Government 1-2 or 4-5.

**Government e16—Current problems of administration.** Credit I, IV. 3 points Spring Session. Mr. A. W. MACMAHON

3:10-4:25 p. m., Wednesday and Friday. Fee \$18

A study of such problems as civil service personnel, budget making, departmental organization and consolidation, executive control, efficiency movements, etc.

Prerequisite: Government 1-2 or 4-5.

## GREEK

**Greek e1-2—Elementary Greek.** Credit I, IV. 4 points each Session. Dr. HELEN MCCLEES

4:30-5:55 p. m., Monday, Wednesday, and Thursday. Room 501 Hamilton. Fee \$24 each Session

This course is intended for students who have no previous knowledge of Greek.

Reading and oral drill will form a large part of the classroom work and a careful study will be made of the fundamental forms and grammatical principles of the language. The prepared work will be limited to three classroom hours each week. Thirty five minutes of each period will be devoted to additional oral and written drill and practice. The work will be



The work of the Winter Session will consist of a drill in the principles and applications of elementary algebra, through quadratics, and including graphic methods. In the Spring Session there will be given a course in plane trigonometry and its application to problems of a practical nature. A thorough drill in the use of logarithms and the slide rule will be included. Students are urged to present for class discussion problems arising in their work.

**Structural mechanics eZ1—Elements of coplanar statics.** 3 points Winter Session. Professor C. H. BURNSIDE

6:10–7 p. m., Tuesday and Thursday. Room 510 Fayerweather. Fee \$18

Algebraic and graphic methods are used in parallel; composition and resolution of forces; principles of equilibrium; determination of stresses in simple jointed frames, such as trusses and cranes; centers of gravity and centroids.

Prerequisite: Course eX1–X2, or its equivalent.

Text-book: Maurer's *Technical Mechanics*, third edition.

**Structural mechanics eZ2—Elements of mechanics of materials.** 3 points Spring Session. Professor C. H. BURNSIDE

6:10–7: p. m., Tuesday and Thursday. Fee \$18

Continuation of Course eZ1. Moments of inertia and radii of gyration of plane areas, built-up beam and column sections; direct tension, compression and shear; strength of beams, columns and riveted joints; deflection of beams.

Prerequisite: Course eZ1.

Text-book: Merriman's *Mechanics of Materials*.

## DRAWING (See p. 25)

## ENGLISH

For advice in regard to courses designated English A, students should consult Mr. D. L. CLARK, Room 710 Journalism Building, and in regard to courses in preparatory English, Mr. D. B. DUNCAN, Room 711 Journalism Building.

### *Collegiate Courses in Composition*

**English eA1–A2—English composition.** Lectures, themes, and conferences. Credit I, IV. 3 points each Session. Fee \$18 each Session

Section 1—3:10–4:25 p. m., Monday and Thursday. Room 603 Journalism. Mr. D. L. CLARK

Section 2—3:10–4:25 p. m., Tuesday and Friday. Room 603 Journalism. Mr. D. L. CLARK

Section 3—3:10–4:25 p. m., Monday and Thursday. Room 605 Journalism. Dr. DOROTHY BREWSTER

Section 4—3:10–4:25 p. m., Tuesday and Friday. Room 605 Journalism. Mr. M. M. HOOVER

Section 5—3:10–4:25 p. m., Monday and Thursday. Room 510 Fayerweather. Mr. G. H. MULLIN

Section 6—3:10–4:25 p. m., Tuesday and Friday. Room 611 Journalism. Dr. R. TAYLOR



Section 7—4:30-5:45 p. m., Monday and Thursday. Room 605 Journalism.  
Dr. DOROTHY BREWSTER

Section 8—7-8:15 p. m., Monday and Thursday. Room 503 Hamilton.  
Dr. S. L. WOLFF

Section 9—7-8:15 p. m., Tuesday and Friday. Room 503 Hamilton. Dr. R. TAYLOR

This course corresponds to English A in Columbia College. It is planned for students who have had four years of high school English or the equivalent. Students are expected to confer regularly with the instructor at times to be appointed within the conference period immediately following each class.

**English eA3-A4—English composition.** Lectures, themes, and conferences. Credit I, IV, if taken both Sessions. 1½ points each Session. Dr. S. L. WOLFF  
9-10:15 a. m., Saturday. Room 707 Journalism. Fee \$9 each Session

This course is equivalent to one-half of English A. It is offered for teachers and students who desire to gain a knowledge of the principles of rhetoric and English composition as they are now taught in the colleges.

Two one-page themes or one three-page theme a week will be called for. Students are expected to confer regularly with the instructor at times to be appointed within the conference period, 10:15-10:45 a. m. No other engagements should be made for this half-hour.

**English eA8—English composition.** Lectures, themes, and conferences. Credit I, IV. 3 points Spring Session. Fee \$18

Section 1—3:10-4:25 p. m., Tuesday and Friday. Mr. G. H. MULLIN

Section 2—3:10-4:25 p. m., Monday and Thursday. Dr. R. TAYLOR

Section 3—3:10-4:25 p. m., Tuesday and Friday. Dr. R. TAYLOR

Section 4—3:10-4:25 p. m., Monday and Thursday. Mr. G. H. MULLIN

Section 5—3:10-4:25 p. m., Tuesday and Friday. Mr. M. M. HOOVER

Section 6—7-8:15 p. m., Tuesday and Friday. Mr. D. L. CLARK

Course eA1 given in the Spring Session for new students.

**English eA9—English composition.** Lectures, themes, and conferences. Credit I, IV. 3 points Winter Session. Fee \$18

Section 1—3:10-4:25 p. m., Tuesday and Friday. Room 512 Journalism.  
Mr. G. H. MULLIN

Section 2—3:10-4:25 p. m., Monday and Thursday. Room 512 Journalism.  
Dr. R. TAYLOR

Section 3—7-8:15 p. m., Tuesday and Friday. Room 507 Hamilton. Mr. D. L. CLARK

Course eA2 given in the Winter Session for students who have already had English eA1 or eA8 or the equivalent.

### *Special Courses in Writing*

No entrance examinations are required for admission to any of the following classes, but prospective students are expected to satisfy the individual instructors of their ability to profit by the course in question. New students intending to register for any of these courses should send to the Office of Extension Teaching, not later than September 20, a story, sketch, or article of about 1,500 words, together with a letter of application for admission to a specified class.

**English e1-2—Advanced composition.** Magazine articles. Credit I, IV. 3 points each Session. Mr. D. L. CLARK  
7-8:15 p. m., Monday and Thursday. Room 603 Journalism. Fee \$18 each Session

This course will aim at teaching the composition of all types of writing that appear in the modern magazine, excepting fiction, drama and poetry. It is designed for the training of professional writers, but other students of ability may elect it with profit. There will be much actual composition both oral and written, and frequent individual conferences with the instructor. Able students desiring assistance in the solution of their special problems will not be bound to a fixed program.

Since admission to this class is granted only after personal consultation with the instructor, and after he has had an opportunity to examine specimens of the applicant's written work, it is desirable that candidates should write him at Columbia University before September 20, submitting written matter of not less than five-hundred words and a somewhat detailed account of their previous training.

**English e1a-2a—English composition.** Advanced course. Lectures, themes and theme criticism. Credit I, IV. 1½ points each Session. Dr. S. L. WOLFF  
11 a. m.—12:15 p. m., Saturday. Room 611 Journalism. Fee \$9 each Session

Open to students who have passed English A with high standing or to special students of maturity. This course presumes a knowledge of formal rhetoric and training in the essentials of composition, correctness and precision. From two to four pages of manuscript (250-500 words) are required each week.

**English e1b-2b—The short story.** Theory of fiction writing. Lectures, themes, and criticism. 4 points each Session. Fee \$24 each Session. Miss HELEN R. HULL

Section 1—3:10-4:25 p. m., Monday. Room 408 Avery

Section 2—7-8:15 p. m., Monday. Room 610 Journalism

A course for students who wish to write fiction and for those who wish to develop critical appreciation of narrative writing. A study of the essentials of narration; work upon characterization in fiction; the general necessities of the short story. Consideration of current fiction. A practical course in writing with criticism and class discussion.

**English e1c-2c—The short story.** Advanced course. English composition. Theory of fiction writing. 4 points each Session. Fee \$24 each Session. Dr. DOROTHY SCARBOROUGH

Section 1—9:30-10:45 a. m., Saturday. Room 712 Journalism

Section 2—3:10-4:25 p. m., Wednesday. Room 713 Journalism

A continuation of English e1b-2b. Story writing studied from the point of the literary critic and of the writer. Details of construction will be investigated and the student called upon to contrive plots. This course, which emphasizes the study of plot, is open to those who have completed or are taking Course 1b-2b, or to those who submit during the first week a sketch or story of not more than 5000 words as evidence of competency; individual conferences.

**English e1d-2d—The short story.** Second advanced course. 4 points each Session. Dr. DOROTHY SCARBOROUGH

8:20-9:35 p. m., Tuesday. Room 611 Journalism. Fee \$24 each Session

Students should consult the instructor at the regular class hour before registration. This course is open only to the following students: those who have done promising work in English e1c-2c; those who have not completed Course e1c-2c but submit at the outset a story of merit; and those graduate students specializing in English composition who wish advanced training in theory and criticism.

**English e1f-2f—Advanced short story writing.** 6 points each Session.  
Professor BLANCHE C. WILLIAMS

11 a. m.—12:15 p. m., Saturday. Room 512 Journalism. Fee \$36 each Session

Lectures, written work, conferences. In order to secure admission, applicants should write to the instructor before September 20, giving a detailed account of their previous training, and submitting a story as evidence of ability to profit from the course. In most cases registration will be limited to students who have completed the preceding courses.

**English e3a-4a—Dramatic composition.** 4 points each Session. Fee \$24 each Session

Section 1—11:10 a. m.—12:25 p. m., Saturday. Room 507 Journalism. Mr. H. H. HUGHES

Section 2—8:20—9:35 p. m., Friday. Room 507 Journalism. Miss MINOR H. LATHAM

This course is designed for students desiring to write plays. In the beginning of the course each student will be required to submit the scenario of a play to be written during the year. These scenarios will be criticized with reference to their suitability for the stage, and the manuscripts prepared from them will be analyzed from the point of view of the dramatist. Specific technical problems will be discussed in class as they come up in the course of the work. Representative recent and current plays will be taken up and analyzed with a view to ascertaining the principles underlying their construction and the causes of their success or failure. Constant practice in plot construction and the preparation of scenarios will be given. In so far as possible the work of the course will be adapted to meet the specific requirements of the individual students.

### *Collegiate Courses in Literature*

**English eB1-B2—English literature.** Lectures, themes, and conferences.  
Credit I, IV. 2 points each Session. Dr. S. L. WOLFF

8:45—9:35 p. m., Monday and Thursday. Room 503 Hamilton. Fee \$12 each Session

This course corresponds to English B in Columbia College. It consists in part of the careful and appreciative study of portions of the works of Chaucer, Spenser, Milton, Pope, and Wordsworth.

**English eB5-B6—Survey of English literature.** Credit I, IV. 3 points each Session. Dr. R. TAYLOR

3:10—4:25 p. m., Monday and Thursday. Room 713 Journalism. Fee \$18 each Session

This course is designed primarily as a survey course in English literature. It aims to acquaint the student with the most important writings of the major authors in each period of the history of English literature.

**English e11a-12a—Public speaking.** Credit I, IV. 2 points each Session.  
Fee \$12 each Session. Mr. E. M. HALLIDAY

Section 1—7:30—9:10 p. m., Wednesday. Room 206 Journalism

Section 2—7:30—9:10 p. m., Friday. Room 206 Journalism

This course will deal with public address. Its aim is to give practical training to men and women of whom speaking is demanded in their profession.

Winter Session: Three-minute extemporaneous addresses on topics of current interest, supplemented by drill in breathing, articulation, gesture and reading aloud.

Spring Session: Exposition, argumentation, after-dinner speaking; how to stir the emotions and move to action.



**English e13-14—Elementary elocution.** Credit I, IV. 2 points each Session. Fee \$12 each Session. Mrs. ESTELLE H. DAVIS

Section 1—9:10-10:50 a. m., Saturday. Room 301 Mines

Section 2—4-5:40 p. m., Wednesday. Room 301 Mines

Winter Session—The mechanics of voice and speech; breathing exercises, vocal gymnastics, and a practical study of English phonetics. The correction of faults in tone (nasality, throatiness, breathiness, etc.), and localisms and sluggishness in speech.

Spring Session—A study of the principles underlying good reading aloud with special reference to phrasing, inflection, and emphasis.

Drill and individual practice at each lesson.

**English e13a-14a—Advanced elocution.** 2 points each Session. Mrs. ESTELLE H. DAVIS

11 a. m.—12:40 p. m., Saturday. Room 301 Mines. Fee \$12 each Session

Winter Session—A study of the emotional element in vocal expression with special reference to utterance, quality of voice, force, pitch, and time.

Spring Session—Practical application of the principles studied during the Winter Session to the oral presentation of types of literature such as the oration, the essay, the lyric, and dramatic narrative in prose and verse.

Prerequisite: English e13-14 or its equivalent.

**English e15-16—English prosody.** Elementary course. 2 points each Session. Mr. B. HOOKER

8:20-10 p. m., Thursday. Room 609 Journalism. Fee \$12 each Session

A technical study of rhythm and meter in English verse, and of the means by which its various effects are produced; intended not only for those engaged in the composition of original verse, but also for those who desire to achieve a richer appreciation of poetry through the understanding of its technical methods. Illustrations will be drawn from contemporary work as well as from that of accepted masters; attention will be given to the character of different verse-forms, as especially suited to the expression of certain types of thought. This course will run throughout the year; no one will be admitted after the beginning of the course without passing an examination in the work already covered.

**English e17-18—Modern literature, English and foreign.** Credit I, IV. 2 points each Session. Professor H. R. STEEVES

6:45-7:35 p. m., Monday and Thursday. Room 602 Hamilton. Fee \$12 each Session

This course is a general survey of the principal current literary types, tracing their characteristics from the influences prevalent in the Victorian period and giving attention to foreign artistic sources and parallels. The course requires extended and rapid outside reading of a weekly average of possibly three hundred or four hundred pages. The required reading can generally be found in the branch libraries of the New York Public Library.

**English e21-22—English literature from 1780-1830.** Credit I, IV. 2 points each Session. Professor F. A. PATTERSON

4:20-6 p. m., Wednesday. Room 408 Avery. Fee \$12 each Session

This course will deal with English romanticism beginning with Cowper. After tracing the first signs of revolt against eighteenth century thought and ideals, it will treat of the new spirit as it expressed itself in the works of the poets and prose writers of the early part of the nineteenth century. While the course will include the work of men not especially well known, it will aim to embrace in considerable detail the poetry of Wordsworth, Shelley, Keats, and Byron. The work will be conducted by means of assigned readings and discussions.

**English e23-24—English literature from 1830-1890.** Credit I, IV. 2 points each Session. Professor J. H. H. LYON

7:30-9:10 Wednesday. Room 503 Hamilton. Fee \$12 each Session



A study of Victorian literature, beginning with Carlyle. In the Winter Session the work will center around Tennyson; in the Spring Session around Browning. Other poets, such as Arnold, Morris, Rossetti, and Swinburne, will be studied. The course will be conducted by means of lectures, assigned readings, and discussions.

**English e39-40—The English novel.** Credit I, IV. 2 points each Session.

Dr. DOROTHY BREWSTER

11 a. m.—12:40 p. m., Saturday. Room 605 Journalism. Fee \$12 each Session

Beginning with Samuel Richardson, the course will trace the development of the novel down to the present day, with due attention to the influence of social and economic changes. The work of the Winter Session will include the early Victorian novel. In the Spring Session, the work will center around Meredith and Hardy. The work of a few of the later novelists will also be considered.

The lectures will be supplemented by assigned readings, reports, and discussions.

**English e41a-42a—Contemporary dramatic literature.** 3 points each Session. Mr. CLAYTON HAMILTON

10-11:40 a. m., Saturday. Room 612 Journalism. Fee \$18 each Session

In this course study is made of representative works of the leading modern dramatists from Victor Hugo to Sir Arthur Pinero. Special attention is devoted to the evolution of contemporary stagecraft. The best new plays presented during the current theater season in New York are also analyzed from the point of view of the dramatic critic. The course is especially helpful to students who desire subsequently to write plays or to write dramatic criticism; it brings the actual theater of today within the reach of academic study.

### *Comparative Literature*

**Comparative literature e3-4—Masterpieces of European literature**  
Credit I, IV. 3 points each Session. Professor J. H. H. LYON

4:30-5:45 p. m., Tuesday and Friday. Room 408 Avery. Fee \$18 each Session

This course is designed to give students an intimate acquaintance with those works of literature which are called World Masterpieces. The method followed will be primarily according to types; but the historical importance of each work studied will be made evident. Rapid outside reading is required of books generally found in all public libraries. Lectures, discussions, and reports.

**Comparative literature e5-6—Greek and Latin literature in English translation.** Credit I, IV. 2 points each Session. Professor KATHARINE C. REILEY and Mrs. ELLINOR TEN BROECK ENDICOTT

4:30-6:10 p. m., Monday. Room 610 Journalism. Fee \$12 each Session

The course will be devoted to the study and interpretation through English translation of the masterpieces of Greek and Latin literature and their formative influence upon European thought and letters.

**Comparative literature e7-8—Modern European literature.** Lectures, readings, and discussions. Credit I, IV. 2 points each Session. Dr. DOROTHY BREWSTER

4:30-5:45 p. m., Wednesday. Room 707 Journalism. Fee \$12 each Session

The course will deal during the Winter Session with contemporary drama and fiction of England and France; during the Spring Session with that of Scandinavia and Germany, and especially with modern Russian fiction.

**Comparative literature e9—Modern European literature.** Lectures, readings, and discussions. Credit I, IV. 2 points Winter Session. Dr. DOROTHY BREWSTER

3:10-4:25 p. m., Wednesday. Room 707 Journalism. Fee \$12

This course considers that part of contemporary literature which is covered in the Spring Session of the preceding course. It will deal with the modern literature of Scandinavia, Germany, and Russia. The works of Gogol, Tolstoy, Dostoevsky, Turgenev, Chekhov, and others, will be discussed.

Comparative literature e8 given in the Winter Session.

**Comparative literature e11-12—Modern poetry.** 2 points each Session.

Miss HELEN R. HULL

3:10-4:25 p. m., Thursday. Room 609 Journalism. Fee \$12 each Session

This course deals with modern poetry of Europe and America. It includes a study of the development of present tendencies in poetic conceptions with some analysis of the social background of which the poetry is an expression, and a study of modern poetic forms. The course is conducted by means of assigned readings, lectures, and class discussions.

### *Graduate Courses*

**English e205—Principles of English usage.** Credit II. 3 points Winter session. Professor G. P. KRAPP

10 a. m.-12 m., Saturday. Room 610 Philosophy. Fee \$18

Consideration will be given in this course mainly to the principles under which instances of divided use in standard modern English may be grouped.

**English e206—Standard English pronunciation, with special reference to the conditions of American speech.** Credit II. 3 points Spring Session.

Professor G. P. KRAPP

10 a. m.-12 m., Saturday. Fee \$18

**English e233-234—English literature in the eighteenth century.** Credit II. 3 points each Session. Professor W. P. TRENT

5:10-6 p. m., Tuesday and Friday. Room 307 Philosophy. Fee \$18 each Session

Covers the development of English literature during the eighteenth century, more especially of the poetry. Emphasis is laid on Defoe, Swift, Pope, Thomson, Gray, Collins, Johnson, Cowper, and Burns, but attention is also paid to many minor writers.

**English e237-238—English literature, 1832-1880.** Credit II. 3 points each Session. Professor A. H. THORNDIKE

5:10-6 p. m., Monday and Wednesday. Room 307 Philosophy. Fee \$18 each Session

Especial attention will be paid to the early Victorian writers and to the relations of literature and the age of industrialism.

**The attention of students is also called to Greek 203-204, p. 63; also to Latin 203-204, p. 70**

### *Preparatory Courses*

**English eV1-V2—The elements of the English language with instruction in speaking, reading, and writing.** 2 points each Session. Miss HELEN E. DILLER

5-5:50 p. m., Wednesday and Friday. Room 601 Hamilton. Fee \$12 each Session

This course is intended principally for educated foreigners who have some knowledge of the English language. Students study elementary principles of English grammar and make brief oral reports on assigned topics. Conversation and reading aloud, with special attention to pronunciation, form a part of every lesson. Some writing and correction are done in class, and one written theme is expected weekly.

**English eW1—English grammar.** 3 points Winter Session. Fee \$18

Section 1—1:45–3:00 p. m., Monday and Thursday. Room 612 Journalism.  
Miss HELEN E. DILLER

Section 2—7:00–8:15 p. m., Monday and Thursday. Room 612 Journalism.  
Mr. D. B. DUNCAN

Section 3—8:20–9:35 p. m., Monday and Thursday. Room 612 Journalism.  
Mr. M. M. HOOVER

This course is intended for mature students who desire to acquire a thorough knowledge of the elementary principles of English grammar. After a rapid review of the parts of speech and their modifications, a detailed treatment of word elements, phrase elements, and clause elements and their relations in sentences will be given. Much time will be devoted to the analysis and synthesis of different types of sentences. Written work will be required for each session. Punctuation will be regarded as a system of points to denote grammatical relations, and thus considerable attention will be given to this subject.

This course is recognized as a credit course for promotion licenses by the Board of Education. Students will be expected to confer regularly with the instructor at such times as he may designate.

Students who contemplate taking college entrance English, either English eX1–X2 or eY1–Y2, should have completed this course or its equivalent.

Text-book: Blount and Northrup's *Elementary English Grammar*.

**English eW2—English composition.** 3 points Spring Session. Fee \$18

Section 1—1:45–3:00 p. m., Monday and Thursday. Miss HELEN E. DILLER

Section 2—7:00–8:15 p. m., Monday and Thursday. Mr. D. B. DUNCAN

Section 3—8:20–9:35 p. m., Monday and Thursday. Mr. M. M. HOOVER

An elementary course in English composition especially planned for those who wish to gain power in writing through practice. The rhetorical essentials of narration, description, exposition, and argumentation will be discussed. Composition subjects will be drawn from the students' own experiences and from contemporary life rather than from literature. Weekly themes will be required, and by means of these the students are expected to master, so far as time permits, the technique of simple prose expression.

Students will be required to consult regularly with the instructor at such times as he may designate. This course, with the first half year, English eW1, furnishes preparation for English eX1–X2 and English eY1–Y2.

Text-books: Woolley's *Handbook of Composition* and Brook's *English Composition*, Book II.

**English eW4—English grammar.** 3 points Spring Session. Mr. D. B. DUNCAN

8:20–9:35 p. m. Monday and Thursday. Fee \$18

Course eW1 repeated in the Spring Session.

**English eW5—English composition.** 3 points Winter Session. Mr. D. B. DUNCAN

8:20–9:35 p. m., Monday and Thursday. Room 610 Journalism. Fee \$18

Course eW2 given in the Winter Session.

**English eX1–X2—English composition and literary readings.** Reading of classics, lectures, oral reports, class discussions, compositions, and written tests. 3 points each Session. Fee \$18 each Session

Section 1—3:10–4:25 p. m., Monday and Thursday. Room 612 Journalism.  
Mr. D. B. DUNCAN



**Section 2—7:00–8:10 p. m., Tuesday and Friday. Room 707 Journalism.**  
**Mr. M. M. HOOVER**

This course is planned to give students an appreciation of literature and facility in composition. The work done will be in actual sequence to that done in English eW1 and English eW2. In addition to the reading of masterpieces in prose and poetry, considerable attention will be given to the planning of compositions and to theme writing. The masterpieces studied will be analyzed in such a way as to show how to read and how to use these masterpieces to develop power in composition writing. The course will meet the needs of people who, while not desiring credit for entrance to college, desire guidance in reading, speaking, and writing. The successful completion of this course will count, in part, toward the removal of entrance conditions in English 1 and English 2. Students will be required to confer regularly with the instructor at such times as he may designate.

Prerequisite: A knowledge of elementary English grammar such as may be acquired in English eW1 or English eW4.

Text-books: Woolley's *Handbook of Composition* and ten classics selected from the lists prescribed by the Committee on Uniform Entrance Requirements.

**English eY1-Y2—Literature and composition.** Themes, lectures, class discussions, and tests. 3 points each Session. Fee \$18 each Session

**Section 1—3:10–4:25 p. m., Tuesday and Friday. Room 612 Journalism. Mr. D. B. DUNCAN**

**Section 2—7:30–10:00 p. m., Wednesday. Room 707 Journalism. Mr. M. M. HOOVER**

This course is planned for three classes of people: (1) those who wish to gain adequate preparation for various college courses in English; (2) mature people who wish to gain accuracy in expression, power in writing, and general culture; and (3) students who wish to prepare themselves to pass the examinations of the College Entrance Examination Board.

The work will consist of a detailed study of four classics, a survey of English literature, and the preparation of many outlines and themes. Emphasis will be laid upon adequacy of information and accuracy of expression. The completion of this course with a grade of *B* will remove entrance conditions in English 2 in Columbia College. Students will be required to confer regularly with the instructor at such times as he may designate. Students already registered in this course who show obvious inability to carry the work will be transferred to Course eX1-X2.

Prerequisite: eX1-X2 or its equivalent (three years of high school English).

Text-books: Woolley's *Handbook of Composition*, Long's *English Literature*, Mitchell and Carpenter's *Exposition in School-Room Practice*, and four classics selected from the list prescribed by the Committee on Uniform Entrance Requirements.

**English eZ1-Z2—English spelling and vocabulary.** 1 point each Session. Fee \$6 each Session. Messrs. D. B. DUNCAN and M. M. HOOVER

**Section 1—9–9:50 a. m., Monday and Wednesday. Room 707 Journalism**

**Section 2—4:30–5:20 p. m., Wednesday and Friday. Room 612 Journalism**

**Section 3—6:10–7 p. m., Monday and Thursday. Room 612 Journalism**

This course is designed for mature students who spell badly. An effort will be made to teach spelling through the threefold appeal to the eye, the ear, and the touch. While considerable time will be devoted to phonics, syllabication and rules of orthography, much more time will be given to actual spelling. The aim will be to discover and correct the deficiencies of the individual student. Attention will be given to words in common use and words commonly misspelled rather than to unfamiliar and technical words. Each student will be required to keep an alphabetical list of all words he misspells.

Text-book: Eldridge's *Business Speller and Vocabulary*.

**Business English e1-2—Business English and commercial correspondence.** 3 points each Session. Fee \$18 each Session. Mr. D. B. DUNCAN

**Section 1—2–3 p. m., Tuesday and Friday. Room 612 Journalism**



Section 2—7:30-9:20 p. m., Wednesday. Room 612 Journalism

Section 3—7:30-9:20 p. m., Tuesday. Room 612 Journalism

This course is intended for office assistants, private secretaries, and those who wish to become proficient in effective business communication. The aim is to teach how to use words in such a way as to make people act. The principles of literary composition will be applied to commercial correspondence. Business situations will be analyzed, letters classified into type forms, and the requisites of each class will be exemplified by many models. The psychology of advertising and the sales letter will be analyzed, and principles derived from this analysis will be applied in actual practice. The course will be not merely theoretical, but practical. Every student will be required to write several letters each week, and no one who has not sufficient time for such written work should take this course.

Special consideration will be given to letters of application, letters of complaint, sales letters, follow-up letters, and collection letters.

A prerequisite to this course is a knowledge of the principles of elementary English grammar.

## FINE ARTS

### [ Architecture e27—Ancient architecture.

The ancient architecture of Egypt, Assyria, Persia, Greece and Rome.  
Will not be given in 1919-1920; will be offered in 1920-1921.]

### [ Architecture e28—Medieval architecture (to Gothic).

Will not be given in 1919-1920; will be offered in 1920-1921.]

### Architecture e29—Medieval and Renaissance architecture (beginning with Gothic). Credit I. 2 points Winter Session

Gothic Architecture in France, England, Italy, Germany, Spain, The Netherlands; analytical and critical discussion of historic development, characteristics and chief examples, including the beginning of the Renaissance as seen in Italy and France.

[ Will not be given in 1919-1920; will be offered in 1920-1921.]

### Architecture e30—Renaissance and modern architecture. Credit I. 2 points Spring Session

The Architecture of the Renaissance in Italy, France, Germany, Spain, the Low Countries, and England; architecture of the nineteenth century in Europe; American Architecture; modern and contemporary developments and tendencies. Analytical and critical discussion of historical development and great examples of architecture since 1420.

[ Will not be given in 1919-1920; will be offered in 1920-1921.]

### Architecture e31-32—Ancient ornament. Credit I, V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Friday. Room 407 Avery. Fee \$12 each Session

General classifications; origins, primitive and savage ornament; the historic ornament of Egypt, Assyria, Persia, Greece and Rome, including Ægean, Cypriote, Phœnician and Etruscan ornament; the development of the styles, the common motives and patterns of both architectural ornament and the minor arts.

### Architecture e33-34—Medieval ornament. Credit I, V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Monday. Room 407 Avery. Fee \$12 each Session

The ornament of the early Christian, Byzantine, Romanesque, and Gothic styles both in architecture, and the minor arts; Moslem and Indian ornament; the development of styles, motives and patterns. Periodic drawings.

### [ Architecture e35-36—Modern ornament.

Will not be given in 1919-1920; will be offered in 1920-1921.]

**Fine arts e51a—The art of the Metropolitan Museum—sculpture and the decorative arts.** A study of the originals in the Museum. 2 points Winter Session. Fee \$12. No University fee. Dr. G. KRIEHN

Section 1—2:30-4:10 p. m., Friday. Metropolitan Museum

Section 2—10:30-12:10 p. m., Saturday. Metropolitan Museum

Section 3—3:15-4:55 p. m., Saturday. Metropolitan Museum. Begins October 11

Section 4—10:30 a. m.-12:10 p. m., Monday. Metropolitan Museum. Begins October 20

Section 4 will be given only if the other sections are filled

This course, combined with Fine arts e52a, offers a year's systematic study of the most important art objects in the Metropolitan Museum. It is an introductory course, designed to teach the appreciation of sculpture and the decorative arts, as practised in the great historic styles, and to outline briefly their history. Among the subjects treated, besides sculpture proper, will be ivories, enamels, ceramics, small bronzes, terracottas, furniture, tapestries, and other decorative arts. Opportunities for the study of these subjects, rivaled only by the best European collections, are offered in the recently opened galleries of classical art, the new J. P. Morgan memorial wing of decorative arts, the galleries of Egyptian art, the collection of Rodin sculptures, and in other departments. Special attention will be devoted to the needs of teachers and university students, for whom Section 2 is designed.

**Fine arts e52a—The art of the Metropolitan Museum—the paintings.** A study of the originals in the Museum. 2 points Spring Session. Fee \$12. No University fee. Dr. G. KRIEHN

Section 1—2:30-4:10 p. m., Friday. Metropolitan Museum

Section 2—10:30 a. m.-12:10 p. m., Saturday. Metropolitan Museum

Section 3—8:15-9:55 p. m., Saturday. Metropolitan Museum. If the Museum is closed Saturday evenings, Section 3 will meet Saturday, 3:15-4:55 p. m.

Section 4—10:30 a. m.-12:10 p. m., Monday. Metropolitan Museum. Begins February 16

Section 4 will be given only if the other sections are filled

Planned for all who wish to learn how to judge and enjoy painting. A continuation of the preceding course, but may be taken independently. While special attention will be given to the technical qualities of painting, its content will not be neglected. Each Session will be devoted to a school or to individual masters of painting; but the treatment will be in historic sequence, thus outlining the history of painting. Among the topics treated are Italian painting, both primitive and developed; the early Netherlandish and German schools; Flemish and Spanish masters; Dutch painting, with special emphasis on Rembrandt (Altman collection); the old English masters; French painting with emphasis on the Barbizon school (Vanderbilt collection); modern European painting; American painting, both early and contemporary. Students, teachers, and others wishing to take the examination should enrol, if possible, in Section 2, which is especially designed for them.

**Fine Arts e53-54—Outlines of art history.** 2 points each Session. Dr. G. KRIEHN

3-4:15 p. m., Monday. Metropolitan Museum. Fee \$12 each Session. No University fee

Requires fifteen students.

A general course, treating the great epochs of art in the western world from the appreciative as well as the historic point of view. The chief subjects are painting, sculpture, and architecture, with emphasis on that phase in which the age or people found its highest expression; in sculpture, for example, in ancient Greece; architecture and decoration during the Roman and medieval epochs, on the painting and sculpture of the Renaissance, and on

painting during the modern period. There will be special lectures on the great masters in whose works art culminated, such as: Michaelangelo, Raphael and Titian in Italy, Rubens and Van Dyck in Flanders, Hals and Rembrandt in Holland, Velazquez in Spain, and Rodin in France. During the nineteenth century, the emphasis will be placed on the painting of France and the United States. A full syllabus will be distributed, and the lectures will be illustrated with the stereopticon.

Use will be made of the important Museum Library, with its fine collection of reproductions of the great masters.

Begins October 13.

**The attention of students is also called to Greek 149, 150, p. 63**

## GEOGRAPHY

**Geography e25—Physical geography of the atmosphere and oceans.**

Lectures and laboratory work. Credit I, IV. 3 points Winter Session. Dr.

A. K. LOBECK

8:20-9:50 p. m., Monday and Thursday. Room 401 Schermerhorn. Fee \$18

The first part of this course consists of an introductory discussion of the earth as a globe; latitude, longitude, and time; methods of map projection; the geographic effects of the earth's rotation and revolution and of terrestrial magnetism. The major part of the time is devoted to consideration of the constitution, temperature, and pressure of the atmosphere; weather predictions and the making of weather maps; climatic provinces. In connection with the ocean the following topics will be considered: The composition and temperatures of ocean water; ocean currents and their effects on navigation, climate, and the distribution of food fishes; tides and their influence on harbors, navigation, and sewage disposal; wave action and its effect on shores and harbors.

Special attention will be paid to the needs of those engaged in, or looking forward to, the teaching of elementary physical geography.

**Geography e26—Physical geography of the lands.** Lectures and laboratory work. Credit I, IV. 3 points Spring Session. Dr. A. K. LOBECK

8:20-9:50 p. m., Monday and Thursday. Fee \$18

This course deals primarily with the origin and evolution of the surface features of the earth. The chief topics considered are: The work of rivers, glaciers, waves, and winds, and the evolution of the forms which they produce; the different types of plains, plateaus, mountains and volcanoes, and their stages of development under stream erosion; the representation of land forms by topographic maps, block diagrams and other methods of illustration.

As in Physical geography e25, special attention will be given to the needs of those members of the class who are engaged in, or looking forward to, the teaching of elementary physical geography.

**Business e9-10—Economic geography.** 2 points each Session. Mr. A. H. STOCKDER

7:30-9:10 p. m., Monday. Room 707 Journalism. Fee \$12 each Session

This course is concerned with a study of the leading industrial and commercial activities of the great nations, with especial reference to the United States. The physical conditions which influence the production of raw materials, the development of manufacturers, the laying out of routes of trade and the location of markets are first considered, and emphasis is then placed upon the production and distribution of the materials which enter into food, clothing, and shelter.

## GEOLOGY

**Geology e1—General geology.** A general introduction to the subject of geology. Lectures and laboratory work. Credit I, IV. 3 points Winter Session. Mr. F. K. MORRIS

8:20-10 p. m., Tuesday and Friday. Room 401 Schermerhorn. Fee \$18



This course covers an introduction to the common rocks, their structure, origin, and occurrence in nature; rock weathering and its products, geological activities of the air; the streams and the sea; characteristics and work of glaciers, volcanoes, and earthquakes.

The laboratory work consists of a study and identification of common rocks, drawing of profiles and structure sections, interpretation of topographical maps, etc. There will be several field trips on Saturday afternoons.

No prerequisite. Equivalent to Geology I in Columbia College. A knowledge of elementary chemistry is desirable.

Text-book: Chamberlin and Salisbury, *College Geology*.

**Geology e2—Historical geology.** The origin of the earth and its development—succession of plant and animal life. Lectures and laboratory. Credit I, V. 3 points Spring Session. Dr. J. J. GALLOWAY

8:20–10 p. m., Tuesday and Friday. Fee \$18

This course deals with the origin of continents and ocean basins and their development during successive geologic periods, characteristic sections and their interpretations, study of important types of fossils as indication of geologic age; the glacial period and the antiquity of man; development of surface features or physiography.

The laboratory work consists of the study of maps, the making of sections, and the identification of fossils, followed by work with physiographic models. There will be several excursions on Saturday afternoons in the spring.

Prerequisite: Geology I or Geology e1 or s1.

Text-books: Chamberlin and Salisbury, *College Geology*; Grabau, *Syllabus of Historical Geology*; Pirsson and Schuchert, *Geology*.

**Geology e3—Lithology.** An introduction to the study of rock-forming minerals and rocks. Demonstration lectures and laboratory work. Credit I, IV. 3 points Winter Session. Mr. R. J. COLONY

7–8:15 p. m., Tuesday and Friday. Room 402 Schermerhorn. Fee \$18

The methods of determining minerals, especially rock-forming minerals; classification of rocks; laboratory practice with both minerals and rocks. The object is to attain facility in sight recognition and discrimination of these natural products, and mastering hand specimen determination and classification.

Text-book: Kemp's *Handbook of Rocks*.

**Geology e4—Elementary petrography.** An introduction to the study of rocks, from thin sections, with the microscope. Laboratory demonstration method of work. Credit I, V. 3 points Spring Session. Mr. R. J. COLONY

6:30–8:10 p. m., Tuesday and Friday. Fee \$18

Methods of mineral identification; structural differences and classification of rocks. A standard set of fifty rocks is used as the basis of this course and particular attention is given to forms of description.

Text-books: Luquer's *Minerals in Rock Sections* and Harker's *Petrology*.

**Geology e36—Meteorology and climatology.** Two lectures per week. Credit I, IV. 3 points Spring Session. Mr. E. M. LEHNERTS

7–8:15 p. m., Monday and Thursday. Fee \$18

The course is intended to include the principles of meteorology and the chief factors in the making of different climates with their effects on general development and human progress. Special attention will be given to the causes of weather change and the rules of forecasting.

**Geology e55—Features of American National Parks.** Two lectures per week. Credit I, IV. 3 points Winter Session. Mr. E. M. LEHNERTS

7–8:15 p. m., Monday and Thursday. Room 401 Schermerhorn. Fee \$18



A course in regional geography and physiography designed to disseminate a knowledge and understanding of the American National Parks: their location, area, scenery, climate, fauna and flora, accessibility, reasons for their preservation, and value to the nation.

The course is especially concerned with interpretation of the land forms of American scenery, as exemplified in these regions where they have attained their most attractive and instructive development. This training will enable the student to comprehend and appreciate not only the scenic wonders of our National Parks, but also the features of his home surroundings or those seen in his travels in other lands.

## GERMAN

**German eA1-A2—Elementary course.** Credit I, IV. 4 points each Session.  
Fee \$24 each Session

Section 1—4:30-5:55 p. m., Tuesday, Wednesday, and Friday. Room 713  
Journalism. Mr. M. G. BACH

*Section 2 limited to men matriculated in Columbia College.*

Section 2—1:10-2 p. m., Monday, Wednesday, and Friday, and two hours to be arranged. Room 507 Hamilton. Professor F. W. J. HEUSER

This course familiarizes the beginner with the common vocabulary and the fundamental grammatical facts of the language so as to enable him to read easy German at sight. Reading forms part of the work from the beginning, together with grammar study, easy exercises in composition, and a considerable amount of colloquial practice in the phrases of everyday life. Although this course is intended for beginners it may be taken with profit by those who have some previous knowledge of the language, but are deficient in grammar. Students entering in February should take Course eA8. For Course eA1 no previous knowledge of German is required.

The entire course completes the college entrance requirement (*a* and *x*) in elementary German.

**German eA8—Elementary course.** Credit I, IV. 4 points Spring Session.  
Mr. O. P. SCHINNERER

7-8:25 p. m., Monday, Wednesday, and Thursday. Fee \$24

Equivalent to German eA1, but given in the Spring Session for students who enter at that time. This course should be followed by German eA9 (equivalent to German eA2). For description see German eA1-A2 above.

**German eA9—Elementary course.** Credit I, IV. 4 points Winter Session  
Mr. O. P. SCHINNERER

7-8:25 p. m., Monday, Wednesday, and Thursday. Room 402 Hamilton  
Fee \$24

Equivalent to German eA2, but given in the Winter Session. For description see German eA1-A2 above.

**German eB1-B2—Intermediate course.** Credit I, IV. 4 points each Session. Professor H. H. L. SCHULZE

4:30-5:55 p. m., Monday, Wednesday, and Thursday. Room 408 Hamilton  
Fee \$24 each Session

This course is intended for students who have satisfied the college entrance requirement in elementary German or have taken Course eA1-A2 or an equivalent. Course eB2 completes the requirement in intermediate German (*b* and *y*) for college entrance or for a degree.

The work of this course includes the reading (partly at sight), of moderately difficult prose and verse by standard modern and classical authors; grammatical instruction, beginning with a rapid review of the elements and embracing the fundamental principles of syntax and word formation; exercises in composition and free reproduction, oral and written, with consider-

able colloquial practice. The texts studied will be selected with reference to variety of style and vocabulary and will include Freytag's *Die Journalisten*, Heine's *Harzreise*, and Schiller's *Wilhelm Tell*.

Prerequisite: Elementary entrance, German eA2 or an equivalent.

**German eB4—Intermediate course.** Credit I, IV. 4 points Spring Session.

Dr. G. A. BETZ

4:30-5:55 p. m., Monday, Wednesday, and Thursday. Fee \$24

Equivalent to eB1, but given in the Spring Session.

**German eB5—Intermediate course.** Credit I, IV. 4 points Winter Session.

Dr. G. A. BETZ

4:30-5:55 p. m., Monday, Wednesday, and Thursday. Room 406 Hamilton.

Fee \$24

Equivalent to eB2, but given in the Winter Session.

**German eE4—Readings in science.** Credit I. 3 points Spring Session.

Mr. O. P. SCHINNERER

4:30-5:45 p. m., Monday and Thursday. Fee \$18

Equivalent to Course E1 of the Winter Session (for description see Columbia College Announcement).

Prerequisite: eB2.

**German eE5—Readings in science.** Credit I. 3 points Winter Session.

Mr. O. P. SCHINNERER

4:30-5:45 p. m., Monday and Thursday. Room 402 Hamilton. Fee \$18

Intended to follow German eE4. Equivalent to E2 of the Spring Session.

**German eJ1-J2—Readings in newspapers and magazines.** Credit I, IV. 3 points each Session. Dr. G. A. BETZ

7-8:15 p. m., Tuesday and Friday. Room 402 Hamilton. Fee \$18 each Session

This course is intended for students who look forward to entering the School of Journalism; also for those who wish to acquire facility in reading as preparation for using the language in the study of history, economics or politics rather than as an introduction to the study of German or other literature (see German e5a-6a). The work includes a review of German syntax, with some practice in writing and speaking (see also German e11-12).

Prerequisite: Intermediate entrance, German eB2, or an equivalent.

**German e11-12—German writing and speaking.** Credit I, IV. 2 points each Session. Professor W. A. BRAUN

10:50 a. m.-12:30 p. m., Saturday. Room 308 Philosophy. Fee \$12 each Session

An advanced practice course, but with a distinctly literary content. It presupposes a good reading knowledge and fair ability to understand the spoken language. This course will be conducted wholly in German. The conversation will be upon topics chosen from the field of literature, daily life, and current events. The composition work will consist in the rendering of outlines of the literature read and in the preparation of original themes.

**German e101-102—History of German literature.** Winter Session from 800 to 1500 A.D.; Spring Session from 1500 to 1800 A.D. Credit II. 3 points each Session. Professor W. A. BRAUN

9-10:40 a. m., Saturday. Room 508 Philosophy. Fee \$18 each Session

The course consists of lectures, readings from Thomas' *Anthology*, and essays or reports on assigned topics. The lectures introduce the student to the more important writers and writings and aim to give a clear, though very general, idea of the character of epochs, and the growth and decay of literary tendencies.

**Properly qualified Extension students will also be admitted to the following courses:**

**German 105—German literature in the nineteenth century;** from the rise of the Romantic School to the revolution of 1848. Credit II. 3 points Winter Session. Professor F. W. J. HEUSER

4:10-5 p. m., Monday and Wednesday. Room 514 Philosophy. Fee \$18

**German 106—Modern and contemporary German drama** since the revolution of 1848. Credit II. 3 points Spring Session. Professor F. W. J. HEUSER

4:10-5 p. m., Monday and Wednesday. Fee \$18

## GOVERNMENT

**Government e1-2—American government.** Credit I, IV. 3 points each Session. Fee \$18 each Session. Dr. R. S. BOOTS and Mr. E. D. GRAPER

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 511 Hamilton

Section 2—7-8:15 p. m. Monday and Thursday. Room 511 Hamilton

A general survey of the whole field, based largely on Beard's *American Government and Politics* (edition of 1914), and designed both for those who wish to teach the subject in the schools and for those who wish to gain an insight into the responsibilities of citizenship. Attention will be confined to national government in the Winter Session; to state, municipal, and local government in the Spring Session.

Identical with Government 1-2 in Columbia College.

**Government e15—American political parties and issues.** Credit I, IV. 3 points Winter Session. Mr. A. W. MACMAHON

3:10-4:25 p. m., Wednesday and Friday. Room 511 Hamilton. Fee \$18

A study of contemporary party issues and party organization.

Prerequisite: Government 1-2 or 4-5.

**Government e16—Current problems of administration.** Credit I, IV. 3 points Spring Session. Mr. A. W. MACMAHON

3:10-4:25 p. m., Wednesday and Friday. Fee \$18

A study of such problems as civil service personnel, budget making, departmental organization and consolidation, executive control, efficiency movements, etc.

Prerequisite: Government 1-2 or 4-5.

## GREEK

**Greek e1-2—Elementary Greek.** Credit I, IV. 4 points each Session. Dr. HELEN McCLEES

4:30-5:55 p. m., Monday, Wednesday, and Thursday. Room 501 Hamilton. Fee \$24 each Session

This course is intended for students who have no previous knowledge of Greek.

Reading and oral drill will form a large part of the classroom work and a careful study will be made of the fundamental forms and grammatical principles of the language. The prepared work will be limited to three classroom hours each week. Thirty five minutes of each period will be devoted to additional oral and written drill and practice. The work will be



## PHOTOPLAY COMPOSITION

**Photoplay composition e1—Elementary course.** 3 points Winter Session.  
Fee \$18. Mrs. FRANCES TAYLOR PATTERSON

Section 1—3:10-4:25 p. m., Tuesday. Room 509 Hamilton

Section 2—7:10-8:25 p. m., Wednesday. Room 509 Hamilton

This course deals in general with the composition of cinematic plot as contrasted with dramatic and narrative plot. It takes up the main problems of presenting a story impressively through the medium of pictures alone. Special attention is paid to the principles of visual appeal, the effective use of motion-picture devices, the art of arousing and sustaining the spectator's interest, the creating of situations and crises, and the logic of emotionally satisfactory endings. Scenarios and detailed synopses are prepared according to the current usage in the studios. Films are exhibited and analyzed before the class.

Each student is required to write scenarios of at least one adaptation and one original photoplay.

**Photoplay composition e2—Elementary course.** 3 points Spring Session.  
Fee \$18. Mrs. FRANCES TAYLOR PATTERSON

Section 1—3:10-4:25 p. m., Tuesday

Section 2—7:10-8:25 p. m., Wednesday

Identical with Photoplay composition e1, but offered in the Spring Session.

**Photoplay composition e3—Intermediate course.** 3 points Winter Session. Fee \$18. Mrs. FRANCES TAYLOR PATTERSON

Section 1—3:10-4:25 p. m., Thursday. Room 509 Hamilton

Section 2—8:30-9:45 p. m., Wednesday. Room 509 Hamilton

This course deals specifically with the finer problems of the photoplay as an art. There is discussion of such topics as the psychology of cinema characters, symbolism, allegory, the spectator's imagination, dramatizing natural setting, pictorial composition, and the progression of pictures.

Each student is expected to complete the scenario of an original five-reel photoplay, or to produce other original work of equivalent value.

Prerequisite or parallel: Photoplay composition e1 or e2 or s2.

**Photoplay composition e4—Intermediate course.** 3 points Spring Session.  
Fee \$18. Mrs. FRANCES TAYLOR PATTERSON

Section 1—3:10-4:25 p. m., Thursday

Section 2—8:30-9:45 p. m., Wednesday

Identical with Photoplay composition e3, but offered in the Spring Session.

**Photoplay composition e5-6—Advanced course.** 4 points each Session.  
Mrs. FRANCES TAYLOR PATTERSON

8-9:15 p. m., Monday. Room 509 Hamilton. Fee \$24 each Session

This course is open only to those who have completed successfully the work in the intermediate course. The class is limited to ten students. For description of the work done consult the instructor.

**Photoplay making e7-8—Motion-picture photography.** Lectures, demonstrations, laboratory and field work. 3 points each Session. Mr. C. L. GREGORY  
Lectures, 7:30-9:10 p. m., Thursday; laboratory and field work, Saturday afternoons. Room 515 Havemeyer. Fee \$18 each Session

This course consists of training in the practice and technic of motion-picture photography. Lectures will be given on the theory of photography, camera operation, construction, and negative production, followed by work in the field photographing topical events, educational and



scientific subjects. In conjunction with the classes in photoplay composition, scenes from their original productions will be filmed. Laboratory work will consist of demonstrations and the development and finishing of the scenes taken in the field and occasional visits to studios and film-finishing laboratories near the city.

## PHYSICAL EDUCATION

*(For men students only)*

**Physical education eA1-A2—Gymnastics and games.** Credit I, IV. 2 points each Session. Mr. C. J. MERNER

8:30-9:20 p. m., Monday, Wednesday, and Thursday. University Gymnasium. Fee \$12 each Session

This course comprises free exercises with and without hand apparatus and chest-weight exercises; simple work on gymnastic apparatus, such as horizontal ladder, horizontal bar, ropes, buck, horse, etc., gymnasium games.

Students taking this course for credit in Columbia College will be required to attend one hour a week (hour to be arranged with the instructor) a course in hygiene and sanitation during the Winter Session and to pass an examination in swimming during the Spring Session.

**Physical education eW1-W2—Wrestling.** 2 points each Session. Fee \$12 each Session. Mr. A. PETERSON

Section 1—7:30-8:30 p. m., Thursday. University Gymnasium

Section 2—8:30-9:30 p. m., Thursday. University Gymnasium

**Physical education eY1-Y2—Swimming.** 2 points each Session. Fee \$12 each Session. Mr. E. T. KENNEDY

Section 1—Monday, 8:30-9 or 9-9:30 p. m. University Gymnasium

Section 2—Wednesday, 8:30-9 or 9-9:30 p. m. University Gymnasium

Section 3—Thursday, 8:30-9 or 9-9:30 p. m. University Gymnasium

Students may receive instruction on either Monday, Wednesday, or Thursday, and will have the privilege of using the swimming-pool on the remaining evenings.

**Physical education eZ1-Z2—Boxing.** 2 points each Session. Fee \$12 each Session. Mr. G. WEEMAN

Section 1—Thursday, 7:30-8:30 p. m. University Gymnasium

Section 2—Thursday, 8:30-9:30 p. m. University Gymnasium

Students have the privilege of using the gymnasium and swimming-pool Monday, Wednesday and Thursday evenings from 8 to 10 o'clock.

**For courses in Hygiene, see pp. 66, 67**

## PHYSICS

**Physics eA1-A2—Elementary course in general physics.** 3 hours' lectures and recitations, with 2 hours' laboratory work a week. Credit I, IV. 4 points each Session. Fee \$24 each Session. Dr. L. B. MORSE and assistants

7:30-9 p. m., Monday and Thursday, lectures. Room 304 Fayerweather. The laboratory work is done in sections of 12 students each, the number of sections and the hours of meeting depending upon the number registering for the course. In 1918-1919 the sections met as follows:

Section 1—Monday, 5:30-7:30 p. m.

Section 2—Monday, 9-11 p. m.

Section 3—Thursday, 5:30-7:30 p. m.

Section 4—Thursday, 9-11 p. m.

In assigning students to laboratory sections, preference will be given to those who register first

An introductory course in physics for students who wish to become acquainted with the results, methods and spirit of the science, whether they intend to pursue its study further or wish an elementary knowledge of physics only as a matter of general interest. A knowledge of elementary algebra and geometry is required. Trigonometry is not required.

**POLISH** (See Slavonic, pp. 90-93)

**POLITICS** (See Government, p. 62)

### PSYCHOLOGY

**Psychology e1-2—Elements of psychology.** Lectures, demonstrations, discussions, and recitations. Credit I, IV. 3 points each Session. Fee \$18 each Session. Professors R. S. WOODWORTH and A. T. POFFENBERGER

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 516 Schermerhorn

Section 2—7-8:15 p. m., Tuesday and Friday. Room 407 Schermerhorn

This is the basal course and covers the field of psychology as comprehensively as possible. Instinct and emotion, sensation and perception, habit and memory, imagination, reasoning, will, and personality are the main topics.

**Psychology e5-6—Psychology for nurses and social workers.** Lectures and discussion. Credit IV. 2 points each Session. Dr. KATHARINE MURDOCK 8-9:40 p. m., Tuesday. Room 407a Schermerhorn. Fee \$12 each Session

This course gives briefly the fundamental principles of psychology, stressing constantly their application in social situations arising in the practice of nursing and other forms of community service. Instinct, habit, individual differences, and the influence of heredity and environment will receive special consideration.

**Psychology e131-132—Mental hygiene.** Credit II. 3 points each Session. Dr. C. I. LAMBERT

5-6:40 p. m., Monday. Room 407a Schermerhorn. Fee \$18 each Session

The causes, treatment, prevention, and social significance of mental defects and disorders will be considered in a way to appeal specially to the social worker. Institutions will be visited, and an evening a month devoted to conferences and special lectures.

**Psychology e145—Vocational and industrial psychology.** Credit II, IX. 3 points Winter Session. Professor H. L. HOLLINGWORTH

4:30-6:10 p. m., Monday. Room 407 Schermerhorn. Fee \$18

Psychological methods and principles applied to the problems of human engineering, in such fields as vocational guidance, the selection of employees, management and organization of personnel, industrial time and motion study, job-analysis, trade-testing, and the personal and environmental conditions of effective and satisfying work. Illustrated by concrete demonstrations and by the results of current studies in the field. This course may be appropriately followed by Business e118 or accompanied by Business e117.

**Psychology e146a—Vocational and industrial psychology.** Credit II, IX. 3 points Spring Session. Professor H. L. HOLLINGWORTH

7:40-9:20 p. m., Wednesday. Fee \$18

This course is identical with Psychology e145, but is given in the Spring Session and in the evening. It may be appropriately preceded by Business e117 or accompanied by Business e118a.

**Psychology e165-166—Social psychology.** Credit II. 3 points each Session. Professor R. S. WOODWORTH

7-8:40 p. m., Monday. Room 407a Schermerhorn. Fee \$18 each Session

Course e165 will consider the instinctive basis of social behavior, the role of imitation and suggestion, of habit and of invention, and will attempt a psychological analysis of such social phenomena as fashion, loyalty, morale, unrest, radicalism and conservatism. Course e166 will examine the mental constitution of the social group, the distribution of intelligence and morality, the influence of heredity and environment, the mental status of delinquents and dependents and the motivation of a social behavior.

**Psychology e305-306—Psychological seminar.** Credit II. 3 points each Session. Professors R. S. WOODWORTH and H. L. HOLLINGWORTH

7:30-10 p. m., Thursday. Room 406 Schermerhorn. Fee \$18 each Session

Recent advances and present activities in psychology are in the literature and through reports from professors and students on the fields of their special interests and researches. In 1919-1920 these reports will include a series of conferences by Professor Woodworth on the topic of "Motivation," and by Professor Hollingworth on "The Psychology of the Functional Neuroses."

**Business e117—The psychology of advertising and selling.** Credit II, IX. 3 points Winter Session. Professor H. L. HOLLINGWORTH

7:40-9:20 p. m., Wednesday. Room 407 Schermerhorn. Fee \$18

Application of psychological principles and experimental methods to the problems of appeal and response in advertising and selling. Analysis and evaluation of the methods and devices of publicity on the basis of (1) the known facts of human nature; (2) detailed examination of actual advertising campaigns and analysis of their results; (3) application of laboratory and statistical technique; and (4) comparative study of old and new methods of marketing. The material for the entire course is based on the findings of experimental investigation and the results of actual sales campaigns. Illustrated by lantern slides and current publicity materials. This course may be appropriately followed by Psychology e146 or accompanied by Psychology e145.

**Business e118a—The psychology of advertising and selling.** Credit II, IX. 3 points Spring Session. Professor H. L. HOLLINGWORTH

4:30-6:10 p. m., Monday. Fee \$18

This course is identical with Business e117, but is given in the Spring Session in the afternoon. It may be appropriately preceded by Psychology e145 or accompanied by Psychology e146.

## PUBLIC HEALTH (Sociology e110, p. 94)

## RELIGIOUS EDUCATION

The Department of Extension Teaching in cooperation with the New York City Sunday School Association will offer courses in religious education during the academic year 1919-1920. The courses will be given on Monday evening at 8 p. m. from October to March, and will cover the work of a single term or Session. They are intended for officers and teachers of church schools of religion, directors of religious education, pastors, leaders of training classes, and students of education in general.

They will be accepted for matriculated students for the degrees of Columbia University on the approval of the School and Department concerned. They lead



also to the diploma of the International Sunday School Association. The subjects treated are Biblical history and literature, Educational theory, Supervision and management, Child study.

All students registered under the New York City Sunday School Association must pay a fee of \$2 for the course; all others and students who desire to count their courses for academic credit must pay at the rate of \$6 per point and register in the Department of Extension Teaching, Columbia University.

A circular giving details will be sent on application to the Secretary of Columbia University, or to the New York City Sunday School Association, 1 Madison Avenue.

### ROMANCE LANGUAGES

All the courses in Romance Languages in Extension Teaching are under the general supervision of Professor GERIG; office hours 4:15 p. m., Monday and Thursday, Room 506 Philosophy.

#### *French*

**French eA1-A2—Elementary course.** Credit I, IV. 4 points each Session. Fee \$24 each Session

Section 1—4:30-5:55 p. m., Tuesday, Wednesday, and Friday. Room 303 Hamilton. Mr. L. FERARU

Section 2—8:30-9:55 p. m., Monday, Wednesday, and Thursday. Room 307 Hamilton. Mr. J. H. ENGLISH

Section 3—3-4:25 p. m., Tuesday, Wednesday, and Friday. Room 609 Journalism. Dr. ALMA DE L. LEDUC

Section 4—3-4:25 p. m., Monday, Wednesday, and Thursday. Room 611 Journalism. Dr. L. H. ALEXANDER

Section 5—7-8:25 p. m., Tuesday, Wednesday, and Friday. Room 309 Hamilton. Mr. L. FERARU

*College sections 6 and 7 limited to men matriculated in Columbia College.*

Section 6—11-11:50 a. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 611 Journalism. Dr. J. L. PERRIER

Section 7—1:10-2 p. m., Monday, Wednesday, and Friday. Room 309 Hamilton; 2:10-3 p. m., Tuesday and Thursday. Room 406 Hamilton. Mr. G. T. WILKINSON

This course is intended for students who have no previous knowledge of French.

The instruction is planned so as to enable students to read at sight ordinary French prose. Reading and oral drill will constitute a large part of the work of the course. In connection with the reading, a careful study of the essentials of grammar and syntax will be taken up, together with simple composition. Attention will be paid to correct pronunciation, and as far as possible to the understanding of simple spoken French.

**French eA3-A4—Elementary course.** Credit I, IV. 2 points each Session. Dr. H. J. SWANN

9-10:40 a. m., Saturday. Room 507 Journalism. Fee \$12 each Session

Courses eA3-A4 are together equivalent to French eA1.

**French eA5-A6—Elementary course.** Credit I, IV. 2 points each Session. Dr. H. J. SWANN

11 a. m.-12:40 p. m., Saturday. Room 603 Journalism. Fee \$12 each Session

Courses eA5-A6 are supplementary to French eA3-A4, and are together equivalent to French eA2.

Prerequisite: Half year of French.

**French eA8—Elementary course.** Credit I, IV. 4 points Spring Session. Fee \$24

Section 1—4:30–5:55 p. m., Tuesday, Wednesday, and Friday. Mr. J. H. ENGLISH

Section 2—4:30–5:55 p. m., Monday, Wednesday, and Thursday. Mr. P. DE LA ROCHELLE

Section 3—7–8:15 p. m., Tuesday; 7–8:45 p. m., Wednesday; and 7–8:15 p. m., Friday. Dr. H. J. SWANN

Equivalent to French eA1, given in the Spring Session for students who enter at that time. This course should be followed by French eA9 in the succeeding Session. For description, see French eA1–A2 above.

**French eA9—Elementary course.** Credit I, IV. 4 points Winter Session. Fee \$24

Section 1—4:30–5:55 p. m., Tuesday, Wednesday, and Friday. Room 307 Hamilton. Mr. J. H. ENGLISH

Section 2—4:30–5:55 p. m., Monday, Wednesday, and Thursday. Room 507 Hamilton. Mr. P. DE LA ROCHELLE

Section 3—7–8:15 p. m., Tuesday; 7–8:45 p. m., Wednesday; and 7–8:15 p. m., Friday. Room 406 Hamilton. Dr. H. J. SWANN

Equivalent to French eA2. Planned also for students who began the study of French in the Summer Session.

Prerequisite: Half year of French.

**French eB1–B2—Intermediate course—grammar, reading, and composition.** Credit I, IV. 4 points each Session. Fee \$24 each Session

Section 1—4:30–5:55 p. m., Monday, Wednesday, and Thursday. Room 503 Hamilton. Dr. T. CLARK

Section 2—2:30–3:55 p. m., Tuesday, Wednesday, and Friday. Room 712 Journalism. Mr. L. FERARU

Section 3—7–8:15 p. m., Tuesday; 7–8:45 p. m., Wednesday; and 7–8:15 p. m., Friday. Room 408 Hamilton. Miss BLANCHE PRENEZ

The work will include a review of the essentials of grammar, exercises in composition, and much oral practice in reading and conversation. The reading will consist of narrative and historical texts and several plays.

Prerequisite: One year of college French or equivalent.

**French eB3–B4—Intermediate course—grammar, reading, and composition.** Credit I, IV. 2 points each Session. Mr. L. FERARU

11 a. m.–12:40 p. m., Saturday, Room 511 Journalism. Fee \$12 each Session

Courses eB3–B4 are together equivalent to French eB1.

**French eB8—Intermediate course—grammar, reading, and composition.** Credit I, IV. 4 points Spring Session. Fee \$24

Section 1—4:30–5:55 p. m., Tuesday, Wednesday, and Friday. Professor H. F. MÜLLER

Section 2—7–8:15 p. m., Tuesday; 7–8:45 p. m., Wednesday; and 7–8:15 p. m., Friday. Mr. P. DE LA ROCHELLE

Equivalent to French eB1, given in the Spring Session. This course should be followed by French eB9 in the succeeding Session. For description, see French eB1–B2 above.

**French eB9—Intermediate course—grammar, reading and composition.**

Credit I, IV. 4 points Winter Session. Fee \$24

Section 1—4:30-5:55 p. m., Tuesday, Wednesday, and Friday. Room 402 Hamilton. Professor H. F. MÜLLER

Section 2—7-8:15 p. m., Tuesday; 7-8:45 p. m., Wednesday; and 7-8:15 p. m., Friday. Room 516 Hamilton. Mr. P. DE LA ROCHELLE

Equivalent to French eB2, given in the Winter Session. For description, see French eB1-B2 above.

**French e3-4—Practical course and introduction to French literature.**

Composition, readings, and conversation. Credit I, IV. 3 points each Session. Professor D. BIGONGIARI

4:30-5:45 p. m., Tuesday and Friday. Room 502 Hamilton. Fee \$18 each Session

The work is to consist of lectures and conversations on the history of French literature, supplemented by the reading of selected works from representative authors.

Equivalent to French 3-4 in Columbia College and Barnard College.

Prerequisite: French eB1-B2 or equivalent.

**French e3a-4a—Practical course and introduction to French literature.**

Composition, readings, and conversation. Credit I, IV. 3 points each Session. Mr. P. DE LA ROCHELLE

8:20-9:35 p. m., Tuesday and Friday. Room 406 Hamilton. Fee \$18 each Session

Intended for students completing French eB9. French e4a equals French e3 given in the Spring Session; French e3a equals French e4 given in the Winter Session. For description see French e3-4 above.

**French e9-10—Advanced composition and practice in speaking French.**

Credit I, IV. 3 points each Session. Fee \$18 each Session

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 408 Avery. Mr. H. C. OLINGER

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 403 Avery. Mr. H. C. OLINGER

The objects of this course are to give students a thorough appreciation and a certain facility in the use of the French language as an instrument of expression. The exercises will consist of composition, and conversation based upon topics of practical everyday French.

Prerequisite: French eB1-B2 or equivalent.

**French e15-16—Contemporary French writers, 1885-1918.**

Credit I. 2 points each Session. Professor A. G. H. SPIERS

4:30-6:10 p. m., Monday. Room 303 Hamilton. Fee \$12 each Session

Rapid reading and discussion of significant poetry, novels, and drama of the present day, accompanied by talks on the general tendencies of French thought before and during the war. Conducted in French.

Those wishing to take this course are requested to communicate with Professor SPIERS as early as possible so that books may be ordered from abroad.

Prerequisite: French e3-4 or equivalent.

**Business eb93-94—Commercial French: intensive training course in spoken French.**

Credit IX. 2 points each Session. Professor P. DE BACOURT

4-5:40 p. m., Tuesday. Room 610 Journalism. Fee \$12 each Session

To supplement Commercial French b93-94 of the School of Business.



Intended to develop facility of speech for commercial purposes.

Prerequisite: French b94 or French 4, or a sufficient command of spoken French to the satisfaction of the instructor.

**French e119-120—French literature in the nineteenth century.** Credit II. 3 points each Session. Professor E. B. BABCOCK

4:30-5:45 p. m., Tuesday and Friday. Room 406 Hamilton. Fee \$18 each Session

This course deals with trends of thought in the nineteenth century as exemplified by representative works of the chief novelists, dramatists, and poets. After a survey of the Romantic movement special attention will be given to contemporary writers, the contributions of modern France to history and philosophy receiving consideration as well as the tendencies and development of present-day literature. Lectures and assigned readings, class discussions, and reports on special topics will form the basis of the work. Some attention will be given to the literature produced in France as a result of the war. The course will be conducted in French.

Prerequisite: French e3-4 or equivalent.

Equivalent to French 119-120 in the Faculty of Philosophy.

### *Italian*

**Italian e1-2—Elementary course.** Credit I, IV. 3 points each Session. Mr. G. BIGONGIARI

7-8:15 p. m., Monday and Thursday. Room 518 Hamilton. Fee \$18 each Session

The aim of this course is to impart an accurate reading knowledge of modern Italian, together with a correct pronunciation. The work will consist of a careful study of the elements of grammar and syntax, and in Italian e2 special attention will be paid to reading and composition.

Equivalent to Italian 1-2 as given in Columbia College and Barnard College.

**Italian e3-4—Advanced course.** Credit I, IV. 3 points each Session. Mr. G. BIGONGIARI

7-8:15 p. m., Tuesday and Friday. Room 518 Hamilton. Fee \$18 each Session

This course will consist of advanced reading, composition, and conversation. The two courses together may be considered a preparation for the graduate courses of the Faculty of Philosophy.

Equivalent to Italian 3-4 as given in Columbia College and Barnard College.

### *Spanish*

**Spanish eA1-A2—Elementary course.** Credit I, IV. 3 points each Session. Fee \$18 each Session

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 707 Journalism. Mr. L. IMBERT

Section 2—3:10-4:25 p. m., Monday and Thursday. Room 712 Journalism. Mr. E. AGRAMONTE

Section 3—3:10-4:25 p. m., Tuesday and Friday. Room 707 Journalism. Mr. E. AGRAMONTE

Section 4—3:10-4:25 p. m., Tuesday and Friday. Room 713 Journalism. Professor L. A. LOISEAUX

Section 5—7-8:15 p. m., Tuesday and Friday. Room 511 Hamilton. Mr. F. CALLCOTT

Section 6—7:30-8:45 p. m., Monday and Thursday. Room 309 Hamilton. Mr. L. A. WILKINS

Section 7—6:10-7:25 p. m., Tuesday and Friday. Room 303 Hamilton. Mr. A. TORRES

Section 8—2:30-3:55 p. m., Tuesday and Friday. Room 507 Journalism. Dr. J. A. VAETH

The aim of this course is to impart an accurate reading knowledge of modern Spanish together with a correct pronunciation. The work will consist of a careful study of the elements of **grammar** and syntax; and in Spanish eA2 special attention will be paid to composition.

Equivalent to Spanish A1-A2 as given in Columbia College and Spanish 1-2 in Barnard College.

**Spanish eA8—Elementary course.** Credit I, IV. 3 points Spring Session. Fee \$18

Section 1—4:30-5:45 p. m., Tuesday and Friday. Dr. T. CLARK

Section 2—6:10-7:25 p. m., Monday and Thursday. Mr. L. A. WILKINS

Equivalent to Spanish eA1. This course should be followed by Spanish eA9 in the succeeding Session. For description, see Spanish eA1-A2 above.

**Spanish eA9—Elementary course.** Credit I, IV. 3 points Winter Session. Fee \$18

Section 1—4:30-5:45 p. m., Tuesday and Friday. Room 309 Hamilton. Dr. T. CLARK

Section 2—6:10-7:25 p. m., Monday and Thursday. Room 307 Hamilton. Mr. L. A. WILKINS

Equivalent to Spanish eA2. Planned also for students who begin the study of Spanish in the Summer Session.

**Spanish eA18—Elementary course.** Credit I, IV. 2 points Spring Session. Mr. F. CALLCOTT

3:10-4:50 p. m., Saturday. Fee \$12

A course for students having no knowledge of the language.

**Spanish eA19—Elementary course.** Credit I, IV. 2 points Winter Session. Mr. F. CALLCOTT

3:10-4:50 p. m., Saturday. Room 407 Avery. Fee \$12

Follows Spanish eA18 and is planned for students who have had a quarter year of Spanish.

**Spanish eA21-A22—Elementary course.** Credit I, IV. 2 points each Session. Mr. F. CALLCOTT

1:30-3:10 p. m., Saturday. Room 407 Avery. Fee \$12 each Session

A course for students having no knowledge of the language.

**Spanish eA23-A24—Elementary and intermediate course.** Credit I, IV. 2 points each Session. Mr. L. A. WILKINS

3:10-4:50 p. m., Saturday. Room 408 Avery. Fee \$12 each Session

Continuation of Spanish eA21-A22. Spanish eA21, A22, and A23 are together equivalent to Spanish eA1-A2.

Prerequisite: Half year of college Spanish or equivalent.

**Spanish eB1-B2—Advanced course.** Credit I, IV. 3 points each Session. Fee \$18 each Session

Section 1—4:30-5:45 p. m., Tuesday and Friday. Room 202 Hamilton. Professor J. L. GERIG

Section 2—7-8:15 p. m., Monday and Thursday. Room 406 Hamilton. Mr. J. MERCADO

Section 3—8:45-10 p. m., Monday and Thursday. Room 402 Hamilton. Mr. L. A. WILKINS

A continuation of Spanish eA1-A2, in which emphasis will be placed on rapid reading of modern prose, on advanced composition and conversation.

Equivalent to Spanish B1-B2 as given in Columbia College and Spanish 3-4 in Barnard College.

**Spanish eB9-B10—Advanced composition, conversational practice, and commercial correspondence.** Credit I, IV. 3 points each Session. Fee \$18 each Session. Mr. E. AGRAMONTE

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 214 Hamilton

Section 2—4:30-5:45 p. m., Tuesday and Friday. Room 214 Hamilton

Section 3—3:30-6 p. m., Saturday. Room 403 Avery

Section 4—7-8:15 p. m., Monday and Thursday. Room 408 Hamilton

Section 5—8:20-9:35 p. m., Monday and Thursday. Room 408 Hamilton

The object of this course is to give the student practice in spoken and written Spanish with special reference to commercial practice, including composition, reading, dictation, and letter writing. Attention will be paid to legal, commercial and technical terms in most common use.

**Spanish e3-4—Practical course and introduction to Spanish literature.** Credit I, IV. 3 points each Session. Mr. L. IMBERT

4:30-5:45 p. m., Tuesday and Friday. Room 408 Hamilton. Fee \$18 each Session

The work consists of composition, conversation, and dictation on the history of Spanish literature supplemented by the reading of selected works by representative authors. Students will be expected to write themes and reports in Spanish.

Prerequisite: Spanish eB1-B2 or equivalent.

Equivalent to Spanish 3-4 as given in Columbia College and Spanish 5-6 in Barnard College.

**Spanish e105—Life and customs of Spain.** Credit II, IV. 3 points Winter Session. Mr. L. A. WILKINS

1:30-3:10 p. m., Saturday. Room 408 Avery. Fee \$18

Reading of selections from Spanish authors in which are depicted the genius, political life, diversions, salient historical facts and customs of Spain. Conducted in Spanish.

Prerequisite: Two years of college Spanish or equivalent.

**Spanish e106—Life and customs of Spanish America.** Credit II, IV. 3 points Spring Session. Mr. L. A. WILKINS

1:30-3:10 p. m., Saturday. Fee \$18

Material selected from Spanish American authors on topics similar to those mentioned in the outline for Spanish e5 (above). Composition in Spanish on assigned topics. Conducted in Spanish.

The attention of students in Romance languages is called to the evening classes in Spoken Languages described in a separate bulletin; also to the Announcement of the Division of Modern Languages, for advanced courses

RUSSIAN (See Slavonic, pp. 90-93)



## SECRETARIAL CORRESPONDENCE

**Secretarial correspondence e1-2—Letter writing.** 3 points each Session. Fee \$18 each Session.

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 603 Journalism. Miss HELEN R. HULL

Section 2—7-8:15 p. m., Tuesday and Friday. Room 509 Hamilton. Dr. DOROTHY SCARBOROUGH

This course is intended for those desiring employment as social secretaries, for those desiring to gain facility in various forms of letter writing for personal use, and for those desiring advanced work in the problems of style in written expression. It aims to establish standards of judgment for form and expression in accordance with the best current usage; to comprehend that usage from two angles, a study of the development of letter writing, and an analysis of the principles underlying present letters; to develop individuality of style. The content of the course is twofold: constant practice in writing, with critical work on current letters, and study of the best published letters. The Winter Session consists of drill in conventions of form, and in the essential qualities of all letters; the emphasis is upon the letter as an expression of the relation between the writer and the receiver. The Spring Session contains a study of the letter as a social and personal document, with work toward flexibility and power of individual expression.

English eA1-eA2 or its equivalent in collegiate composition training is prerequisite.

## SECRETARIAL STUDIES

The University offers through its School of Business and the Department of Extension Teaching classes in secretarial studies. In Extension Teaching these courses normally require two years.

A special circular will be sent on application to the Secretary of Columbia University.

## SEMITIC

**Semitic e123-124—Post-Biblical Jewish history.** Credit II. 2 points each Session. Dr. M. RADIN

4-6 p. m., Thursday. Room 303 Mines. Fee \$12 each Session

The purpose of this course is to acquaint the student with the main outlines of Jewish History from the end of the Babylonian Exile to about 500 A. D. This will be done principally by examination of the sources as far as they are available in English. Lectures and assigned readings.

*Hebrew Literature*

**Semitic e125—The literature of the Old Testament.** Credit II. 3 points Winter Session. Lectures, readings, and reports. Fee \$18. Miss M. ELIZABETH CZARNOMSKA

Section 1—3-4 p. m., Tuesday and Thursday. Room 407 Avery

Section 2—11 a. m.-1 p. m., Saturday. Room 403 Avery

The very diverse works of the 'Divine Library' will be discussed in chronological order and with the proper historical background, now fixed within sufficiently close limits by the latest discoveries and criticism. The object of the course is not only to consider the style and power of each author or group of collaborators, but to determine his or their part in evolving the principles of right living first voiced by the Hebrew people. The necessary history will be sketched in the lectures and references given whereby the student may work it out fully at leisure. Two visits will be made to the Metropolitan Museum by way of illustration.

**Semitic e126—Advanced course.** Readings and discussions. Final paper. Credit II. 3 points Spring Session. Miss M. ELIZABETH CZARNOMSKA  
4-5 p. m., Tuesday and Thursday. Fee \$18

The Allegory; the Apologue; the Tale; the Short Story; Lyric poetry and Epic poetry.

In this course will be considered the elements borrowed from the literatures of earlier or contemporary peoples, the use made of them, and the influence of Hebrew masterpieces upon the literatures of Europe.

**SERB (See Slavonic, p. 93)**

**SLOVAK (See Czech, p. 92)**

## SLAVONIC

### *History*

**History e125—History of Russia.** Lecture-study course. Credit II. 3 points Winter Session. Professor J. D. PRINCE

4-4:50 p. m., lecture; 4:50-5:40 p. m., conference, Wednesday. Room 701 Philosophy. Fee \$18

The work will cover a careful treatment of Russian history from the earliest times to the modern period, with a discussion of the attitude of Russia during the present war and a brief survey of its political development. Special native lecturers will address the class on modern Russian political thought. In connection with this work should be noted the following course which stands in close relation to the history of Russia and is a desirable supplement in order to understand Russian development.

**History e126—History of Serbia, Bulgaria, Poland, and Bohemia.** Credit II. 3 points Spring Session. Professor J. D. PRINCE

4-4:50 p. m., lecture; 4:50-5:40 p. m., conference, Wednesday. Fee \$18

The work will be supplemented by special lectures given by native experts on the present situation in the new Slavonic states of Poland, Czecho-Slovakia and the Kingdom of the Serbs and Croats.

**History e103-104—The history of the Eastern question.** Lectures and conferences. Credit II. 3 points each Session. Fee \$18 each Session. Mr. V. H. KALENDERIAN

Section 1—7:30-9:10 p. m., Tuesday. Room 307 Hamilton

Section 2—4:15-6 p. m., Tuesday. Room 303 Mines

This course deals with the fate of the Ottoman Empire in Europe, Asia, and Africa. A brief survey of the Byzantine and Latin Empires; the conquest of the Turks; the fall of Constantinople and its influence on the successive phases of European diplomacy. The history of the Eastern question during the eighteenth century. Napoleon's Oriental projects; the Holy Alliance and the Eastern question up to the present time, including the present war.

Attention is to be given, with the historical side of the question involving the national and international aspects, to the racial characteristics, the religious, economic and social conditions and cultural background of the peoples involved.

### *Armenian*

**Armenian eA101-102—The elements of the Armenian language with instruction in reading, writing, and speaking.** Credit II. 3 points each Session. Mr. V. H. KALENDERIAN

3-4 p. m., Tuesday and Thursday. Room 301 Mines. Fee \$18 each Session

This course is designed to give to students a working knowledge of the Armenian language.

**Armenian e112—History and culture of the Armenians.** Credit II. 3 points Spring Session. Fee \$18. Mr. V. H. KALENDERIAN  
 Section 1—4:15-6 p. m., Thursday  
 Section 2—7:15-9 p. m., Thursday

The course will present a careful treatment of the history of Armenia from its earliest times to the present period, including her civilization and colonies in various parts of the world. It will cover a discussion of the Armenian question especially during the years 1829 to 1914, the recent massacres and deportations, the part played by the Armenians in the World War, and the problem of her political reconstruction.

### *Russian*

**Russian e102—The elements of the Russian language with instruction in reading, writing, and speaking.** Credit II. 3 points Spring Session. Professor J. D. PRINCE  
 4-5:40 p. m., Friday. Fee \$18

The object of this course is to enable students, who have arrived too late to begin Russian in the regular University course, to commence their study of the language during the Spring Session.

**Russian e107-108—The elements of the Russian language with instruction in reading, writing, and speaking.** Credit II. 3 points each Session. Mr. I. S. ANDREEVSKI

5:15-6:55 p. m., Tuesday. Room 517 Hamilton. Fee \$18 each Session

This course is intended for beginners and will continue throughout the year. New students who are qualified may be admitted at the beginning of the Spring Session.

Text-book: Hugo's *Russian Grammar*.

**Russian e109-110—Advanced course. Russian composition.** Credit II. 3 points each Session. Mr. I. S. ANDREEVSKI  
 7-8:40 p. m., Friday. Room 517 Hamilton. Fee \$18 each Session

The work of this course will consist of practical exercises based chiefly on selections from Russian masters; the subject-matter of the Spring Session will differ from that of the Winter Session, so that each Session's work will be a complete course in itself.

A prerequisite for the course will be a satisfactory reading knowledge of Russian.

**Russian e115-116—Problems of Russian democracy in the light of the intellectual past of Russia.** Credit II. 3 points each Session. Mr. I. S. ANDREEVSKI

4-5:40 p. m., Friday, Winter Session; 4-5:40 p. m., Thursday, Spring Session. Room 407 Avery. Fee \$18 each Session

It is the aim of this course to offer, in a series of lectures, a historical outline of the development of Russian thought and ideals, recorded in the most prominent literary productions of the nation for the last one hundred and fifty years.

Pointing out in this survey the inevitable connection, interdependence and mutual reaction between the literature and the history of the country, an endeavor will be made to explain the most characteristic aspects of Russian literature and, parallel to this, to estimate the nature of the Russian Revolution in the light of the historical and intellectual past of Russia.

For detailed description of this course, see special circular.

Open to all qualified students.



NOTE. In connection with these credit courses in Russian, attention is called to the classes in the Spoken Language, Russian cX1-X2 and Russian cX3-X4, conducted in coordination with Russian e107-108 and Russian e109-110, respectively, and designed to supplement these courses (see Announcement of Spoken Language, 1919-1920).

**Russian e117—Lectures on Russian literature of the twentieth century.**

Credit II. 3 points Winter Session. Mr. A. YARMOLINSKY

4-5:40 p. m., Thursday. Room 301 Mines. Fee \$18

The course deals, in the main, with the development of Russian literature in the twentieth century. The work will include a study of the representative prose writers since Chekhov and of the Symbolist movement in Russian poetry. Attention will also be given to the recent schools of Russian literary criticism, and an attempt will be made to outline the effects of the war, and the subsequent revolution upon the literary and, generally, cultural life of the country.

NOTE. See also University Announcement, Russian 105-106: Russian literature of the nineteenth century.

**Russian e119-120—History of the Jewish people in eastern Europe.**

Credit II. 3 points each Session. Mr. A. YARMOLINSKY

7-8:40 p. m., Thursday. Room 507 Hamilton. Fee \$18 each Session

This course deals with the history of the Jews in Poland, Russia and neighboring lands from the earliest times to the present day, with special reference to the cultural aspect of Jewish history. The effects of the World War and the Russian Revolution upon the status of the Jewish people in Eastern Europe will also be studied.

*Slavonic*

**Slavonic e111—Folk life and customs of the near Eastern peoples.**

Credit II. 3 points Winter Session. Fee \$18. Mr. V. H. KALENDERIAN

Section 1—4:15-6 p. m., Thursday. Room 308 Philosophy

Section 2—7:15-9 p. m., Thursday. Room 302 Philosophy

This course will deal with the general mode of living, the habits, and the customs chiefly of the Abyssinians, Afghans, Arabs, Armenians, Baluchis, Georgians, Gypsies (Tschingiané), Persians, Syrians, Kurds, Tartars, Turks, the Slavonic nationalities, and Rumanians. There will be a general historical introduction, after which each nation's art; folk lore; folk music and dance; sex mores; birth, marriage, and death ceremonies; religion and superstitions; domestic customs; social and moral codes will be treated in detail.

The Slavonic nationalities will be presented in a lecture by Professor John D. Prince, Head of the Department, and Rumanian folk life and music by Mr. F. Vexler. Each lecture will be illustrated as far as possible by stereopticon views, photographs, and phonograph records, native dancers, and musicians.

*Czecho-Slovak (Bohemian)*

**Czech e101-102—Elementary Czech with exercises in conversation, reading, and composition.** Credit II. 3 points each Session. Mr. A. B. KOUKOL

7-8 p. m., Monday and Thursday. Room 308 Philosophy. Fee \$18 each Session

Open to persons unfamiliar with Czecho-Slovak.

**Czech e103-104—Lectures on the development of the Czecho-Slovak literature and the national life in modern times.** Credit II. 3 points each Session. Mr. A. B. KOUKOL

8-9 p. m., Monday and Thursday. Room 308 Philosophy. Fee \$18 each Session

This course will cover especially the period beginning with the rebirth of the Czecho-Slovak people toward the end of the eighteenth century. Emphasis will be laid on the close connection between the present aspirations and accomplishments of this nation and their earlier literary and intellectual endeavors. As an introduction, a few lectures will be devoted to a brief survey of the development of the Czecho-Slovak early literature and of its subsequent decline after Bohemia's loss of political independence in 1620.

Open to persons unfamiliar with Czecho-Slovak.

### *Polish*

**Polish e101-102—Elementary Polish.** Credit II. 3 points each Session. Dr.

A. MORAWSKI-NAWENCH

7-8 p. m., Friday and Saturday. Room 308 Philosophy. Fee \$18 each Session

Elementary course in the Polish language, followed by easy readings with written and oral exercises.

Open to persons unfamiliar with Polish.

**Polish e103-104—Lectures on Polish literature and cultural development.** Credit II. 3 points each Session. Dr. A. MORAWSKI-NAWENCH

8-9 p. m., Friday and Saturday. Room 308 Philosophy. Fee \$18 each Session

Special emphasis will be laid on the productions resulting from the political collapse of Poland; assigned readings in translation and discussion.

Open to persons unfamiliar with Polish.

### *Serbo-Croatian*

**Serb e101-102—Elementary Serbo-Croatian.** Credit II. 3 points each Session. Mr. G. RADIN

7-8 p. m., Monday and Wednesday. Room 302 Philosophy. Fee \$18 each Session

Exercises in conversation, reading, and composition.

Open to persons unfamiliar with Serbo-Croatian.

**Serb e103-104—Lectures on the Serbo-Croatian literary development.** Credit II. 3 points each Session. Mr. G. RADIN

8-9 p. m., Monday and Wednesday. Room 302 Philosophy. Fee \$18 each Session

Special attention will be paid to the traditional epics handed down by the National Bards, as well as the modern literary movement.

Open to persons unfamiliar with Serbo-Croatian.

Attention is also called to the courses in the Spoken Languages (see special circular); also to the classes in Chinese, pp. 42, 43

## SOCIOLOGY

### Social Science

**Social Science e3-4—An introduction to the study of modern social and economic organization conducted in cooperation with Barnard College.** 6 points each Session. Fee \$36 each Session

The course will consist of two series of lectures on Economics and Sociology. The lectures will be supplemented by field work. Extension Teaching students will be permitted, if they desire, to take the lectures only.

The course will open October 29. The second term will close May 5.

For full description consult special circular.

**Sociology e51—Forms of community organization.** Lectures and readings. Credit I, IV. 2 points Winter Session. Mr. L. E. BOWMAN  
3:10-4 p. m., Tuesday and Thursday. Room 515 Kent. Fee \$12

A sociological survey of the forms of popular government in history. Popular control of group activities in foreign countries. Comparative efficacy of various forms of community organization. Principles of group control as shown in historical development of communities. The mir, the mark, the medieval town, the English village.

**Sociology e52—Community organization in the United States.** Lectures and readings. Credit I, IV. 2 points Spring Session. Mr. L. E. BOWMAN  
3:10-4 p. m., Tuesday and Thursday. Fee \$12

Survey of forms of community organization in the United States. Types of present-day communities. Experiments in socialization. Extensive community organization compared with neighborhood socialization.

**Sociology e53—Principles of community organization.** Lectures, readings, and laboratory. Credit I, IV. 2 points Winter Session. Mr. L. E. BOWMAN  
4:10-5 p. m., Tuesday and Thursday. Room 614 Kent. Fee \$12

Community organization principles. Geographical basis of neighborhood. Ethnic factors. Origin of group ideals. Forms of community action. Implications of trial and error process. Neighborhood tradition. Principles of survey. Utilization of community forces.

**Sociology e54—Neighborhood leadership.** Lectures, readings, and laboratory. Credit I, IV. 2 points Spring Session. Mr. L. E. BOWMAN  
4:10-5 p. m., Tuesday and Thursday. Fee \$12

Nucleation in organization. Personal aspects in community activities. Adaptability and fluidity of organization. Motives and methods of leaders. Control of the led. Sympathy of leader and led. Group control of the leader. Potential leadership. Development of the place of the leader. Mobilization of forces. Establishment of a community technique.

**Sociology e55-56—The practice of community organization: principles and methods.** Credit I, IV. 2 points each Session. Mr. L. E. BOWMAN  
Hours to be arranged. Room 503 Kent. Fee \$12 each Session

Round table discussions and field organization work. Discussion of problems met in the conduct of neighborhood organization.

For advanced students and community organizers.

**Sociology e110—Public health and standard of living.** Credit II, IV. 2 points Spring Session. Professor R. E. CHADDOCK  
4-6 p. m., Friday. Fee \$12

This course treats in lectures, reports and discussion the various phases of human conservation, and their economic and social significance. New conditions emphasize as never before the importance of measures to promote infant and child welfare; to improve the health of school children; and to protect, at all stages of their industrial life, the workers of industry. The standards of physical fitness for army service have revealed the consequences of past neglect. Records of physical defects, illness, mortality, individual output in industry acquire a national importance. The administration of health-promoting activities and the protection of the standard of living are becoming matters of national concern.

**Sociology e141—Practical applications of sociology.** Lectures, readings, discussions, and exercises. Credit II, IV. 3 points Winter Session. Mr. H. N. SHENTON

7:40-9:30 p. m., Thursday. Room 615 Kent. Fee \$18



A study of social conditions and processes with a view to determining procedure and policies for readjustment and reconstruction. Population, growth, distribution, density and composition. Migration, international and intra-national. Studies of race mixture, social heterogeneity, standards of living, conflicts of interests, etc. Constructive means for regulation of population movements and for assimilation or Americanization.

**Sociology e142—Practical applications of sociology.** Lectures, readings, discussions, and exercises. Credit II, IV. 3 points Spring Session. Mr. H. N. SHENTON

7:40-9:30 p. m., Thursday. Fee \$18

The development of movements for human betterment, including eugenics, euthenics, social legislation, socialized philanthropy, and social education. Problems of normal and abnormal society. Constructive sociological criticisms of various methods of social reform.

**Sociology e143—Problems of democracy.** Lectures, readings, discussions. Credit II, IV. 3 points Winter Session. Mr. H. N. SHENTON

7:40-9:30 p. m., Monday. Room 503 Kent. Fee \$18

An analysis of democratic society, its structure and behavior. The social relations of individuals essential to democratic functioning. Collective decision. Democratic procedure. Social self-control and social self-determination. Leadership. Standardization *vs.* individuation. Democratic *vs.* paternalistic or anarchistic behavior. Costs of democratic behavior. Advantages. Although historical data will be used, most of the data will be current and as far as possible such as will permit of statistical analysis.

**Sociology e144—Problems of democracy.** Lectures, readings, discussions. Credit II, IV. 3 points Spring Session. Mr. H. N. SHENTON

7:40-9:30 p. m., Monday. Fee \$18

A study of social institutions, an inquiry as to the kind of institutions essential to a democracy and an examination of the nature and tendencies of existing social institutions. The development of institutions from folkways, customs and *mores*. Kinship, religious, educational, political, and industrial institutions as well as those relating to property, sex, publicity, health, and recreation will be studied.

**Sociology e145—International aspects of the class struggle: backgrounds, conditions, and forces.** Credit II, IV. 3 points Winter Session. Mr. S. P. DAVIES

7:40-9:30 p. m., Friday. Room 615 Kent. Fee \$18

Origin and nature of social classes. Underlying social forces. Causes of conflict. Class differentiations in history. Relation of general social conditions to the intensity of class strife. Trend of the struggle in modern nations. Present-day international evidences of conflict: labor unrest and popular uprisings. Class solidarity as an international phenomenon.

**Sociology e146—International aspects of the class struggle: programs and policies.** Credit II, IV. 3 points Spring Session. Mr. S. P. DAVIES

7:40-9:30 p. m., Friday. Fee \$18

Social control of conditions underlying class warfare as related to national unity and international concord. Schemes of control, radical and conservative. Inadequacy of *laissez-faire*. Results of state regulation. Democratization of social institutions in effecting class understanding. Social welfare through international cooperation. Interchange of ways and means of control among modern nations. Social aspects of the League of Nations. Other international social programs and conferences.

**Sociology e147-148—Social statistics; principles and methods.** Lectures, readings, and laboratory exercises. Credit II. 3 points each Session. Mr. F. A. ROSS

7:40-9:00 p. m., Tuesday and Thursday. Room 502 Kent. Fee \$18 each Session

The elements of statistical theory that are useful in the analysis of social problems. Data gathering, the several forms of the average, measures of dispersion, reliability of measures, fundamentals of correlation. Organization of investigations, analysis of material and methods of presentation. The course is intended to provide the student with the fundamental tools for sociological research of a statistical nature and for social investigation.

**Sociology e150—Statistics: principles and methods.** Lectures, readings and laboratory exercises. Credit II. 3 points Spring Session. Mr. F. A. Ross  
7:40-9:30 p. m., Wednesday. Fee \$18

Elementary principles of statistics and their application. Study of how to gather, present, and interpret statistical data. Averages, index-numbers, measures of variation from average principles of graphic method, and correlation. Application of principles is required through laboratory courses, and effort is made to acquaint the student with sources of information. Laboratory hour will be arranged.

**Sociology e315-316—Seminar.** Discussions, research, and thesis preparation. Credit II. 3 points each Session. Mr. H. N. SHENTON  
7:40-9:30 p. m., alternate Tuesdays, beginning October 7. Room 503 Kent.  
Fee \$18 each Session

Methods of sociological study and research. Sociological sources. Work supplementing the Extension Teaching courses in sociology, covering especially social assimilation, social institutions, collective decisions and social organization. Attention will be given to the preparation of the theses required of all candidates for the degree of A. M. in sociology.

## SLOVAK (See Slavonic, p. 92)

## SPEECH IMPROVEMENT

**Speech improvement e1-2—Speech improvement: elementary course.**  
Credit IV. 2 points each Session. Miss HANNAH M. CREASEY  
9-10:40 a. m., Saturday. Room 408 Avery. Fee \$12 each Session

This course is intended primarily for teachers wishing to specialize in speech improvement. Attention will be given to stuttering, lisping, and cognate defects.

The study of the anatomy and physiology of the speech mechanism, the psychological aspect, the etiology and correction of speech defects and a practical course in phonetics leading to the correction of negligent, cluttered speech will be considered.

**Speech improvement e3-4—Speech improvement: advanced course.**  
Credit IV. 2 points each Session. Miss HANNAH M. CREASEY  
11 a. m.-12:40 p. m., Saturday. Room 408 Avery. Fee \$12 each Session

This course is intended for teachers wishing to specialize in speech improvement.

The work will be advanced study based on the subjects discussed in the elementary course.

Psychopathology of speech defects, and a study of organic defects will be emphasized.

All students will be permitted to gain practical experience at the Speech Clinic connected with the Jersey City Hospital.

## STENOGRAPHY AND TYPEWRITING

### *Isaac Pitman System*

The courses described below are planned for high school and college graduates who wish to prepare themselves for stenographic or secretarial duties and for students who desire to become teachers of shorthand and typewriting. Classes for beginners are started at the opening of each Winter, Spring, and Summer Session.

In addition to a careful presentation of the principles of stenography and typewriting, instruction is given in the following subjects: Secretarial and stenographic duties; editing; meeting office callers; telephoning; taking dictation; effective arrangement and display of typewriting; various forms and different parts of a letter; preparation of outgoing and incoming mail; commercial abbreviations; office reference books; remittance forms and other commercial papers; shipping and the papers involved; telegrams and cablegrams; practical information for typists; different parts of the typewriter and its care and repair; stencil cutting; operation of the mimeograph. The classroom work is as nearly like that of a business office as it is possible to make it. The touch method of typewriting as practised by rapid operators is taught.

Before receiving credit for courses in stenography and typewriting, students must pass an examination in elementary English, including grammar, composition, spelling, and punctuation. This examination is held regularly on the second Saturday afternoon of the Winter Session and of the Spring Session. All students registered for the morning courses are required to take this examination; any student who fails to obtain a passing grade must take whatever work in English the examiner recommends.

Before receiving final credit in stenography and typewriting, students must complete a week of practice work in the office of the Director.

In Room 509 Journalism Building there is an extensive shorthand library to which students have access.

The courses in stenography and typewriting are under the general supervision of Mr. WILLIAM E. HARNED, Room 509 Journalism. Office hours 3:00-4:00 p. m., Tuesdays and Thursdays.

### *Morning Courses*

The morning courses are completed in one college year of thirty weeks. Students completing the courses are able to write shorthand at the rate of one hundred and twenty-five words a minute and to transcribe their notes on the typewriter at the rate of thirty words a minute. To obtain full credit, students registering for stenography are required to take the corresponding course in typewriting, as designated below.

**Stenography e1-2—Elementary and intermediate.** 6 points each Session.  
Fee \$36 each Session

Section 1—11 a. m.—12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 609 Journalism. Mr. W. E. HARNED

Section 2—10-11 a. m., Monday, Tuesday, Wednesday, Thursday, and Friday, Room 612 Journalism; and 1-2 p. m., Monday, Wednesday, Thursday, and Friday, Room 609 Journalism. Miss EMMA B. DEARBORN

Section 3—9-10 a. m. and 12 m.—1 p. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 612 Journalism. Mr. J. J. WRIGHT

Section 4—10-11 a. m., Monday, Tuesday, Wednesday, Thursday, and Friday; and 1-2 p. m., Monday, Wednesday, Thursday, and Friday. Room 605 Journalism. Mr. F. A. BEIDLEMAN



This course is planned for beginners and should be taken in conjunction with Typewriting e1-2. All secretarial students working for a certificate are required to complete this course and Typewriting e1-2.

**Typewriting e1-2—Elementary and intermediate.** 4 points each Session. Fee \$24 each Session

Section 1—1-2 p. m., Monday, Wednesday, Thursday, and Friday, and 3-4 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 602 Journalism. Mr. W. E. HARNED

Section 2—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 601 Journalism. Miss EMMA B. DEARBORN

Section 3—10-11 a. m., Monday, Tuesday, Wednesday, Thursday, and Friday; and 1-2 p. m., Monday, Wednesday, Thursday, and Friday. Room 601 Journalism. Mr. J. J. WRIGHT

Section 4—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 602 Journalism. Mr. F. A. BEIDLEMAN

This course is planned for beginners and should be taken in conjunction with the corresponding sections of Stenography e1-2.

**Stenography e4—Elementary.** 6 points Spring Session. Fee \$36

Section 1—9-10 a. m. and 11 a. m.-12 m., Monday, Tuesday, Wednesday, Thursday, and Friday. Mr. N. K. BRYANT

Section 2—10-11 a. m. and 11 a. m.-12 m., Monday, Tuesday, Wednesday, Thursday, and Friday. Mr. C. MILLER

This course is planned for beginners and should be taken in conjunction with Typewriting e4.

**Typewriting e4—Elementary.** 4 points Spring Session. Fee \$24

Section 1—10-11 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Mr. N. K. BRYANT

Section 2—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Mr. C. MILLER

This course is planned for beginners and should be taken in conjunction with Stenography e4.

**Stenography e5—Intermediate.** 6 points Winter Session. Fee \$36

Section 1—9-10 a. m. and 11 a. m.-12 m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 507 Journalism. Mr. N. K. BRYANT

Section 2—10-11 a. m. and 11 a. m.-12 m., Monday, Tuesday, Wednesday, Thursday, and Friday; 10-11 a. m., Room 507 Journalism; 11 a. m.-12 m., 612 Journalism. Mr. C. MILLER

This course is planned for students who have completed Stenography e4 or e1, or the equivalent, and should be taken in conjunction with Typewriting e5. All secretarial students working for a certificate are required to complete this course, or Stenography e2, and Typewriting e5.

**Typewriting e5—Intermediate.** (Speed practice and transcription.) 4 points Winter Session. Fee \$24

Section 1—10-11 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 602 Journalism. Mr. N. K. BRYANT

Section 2—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 601 Journalism. Mr. C. MILLER

This course is planned for students who have completed Typewriting e4 or e1, or the equivalent, and should be taken in conjunction with Stenography e5.

**Stenography e9-10—Advanced.** 2 points each Session. Miss EMMA B. DEARBORN

3:10-4 p. m., Tuesday, Wednesday, and Friday. Room 601 Journalism. Fee \$12 each Session

All second-year secretarial students who have completed the morning shorthand and typewriting courses, or who have obtained stenographic instruction in other schools, are required to attend this course three days of each week for the whole of the second year. General business and legal dictation will be given at a rate varying from one hundred to two hundred words a minute.

### *Afternoon and Evening Courses*

The courses offered in the afternoon and evening are planned for students who can give only a portion of their time to the study of shorthand and typewriting. Both elementary and continuation classes are started in September and in February. Students registering for stenography are urged to take the corresponding course in typewriting, as designated below. After a study of both shorthand and typewriting for forty-five or sixty weeks, students are able to write shorthand at the rate of one hundred words a minute, to transcribe their shorthand notes on the typewriter at the rate of twenty-five words a minute, and to perform the usual stenographic duties in a business office.

**Stenography e11-12—Elementary.** 3 points each Session. Mr. C. MILLER  
5:15-6:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 611 Journalism. Fee \$18 each Session

This course is planned for beginners and should be taken in conjunction with Typewriting e11-12.

**Typewriting e11-12—Elementary.** 2 points each Session. Mr. C. MILLER  
4:15-5:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 602 Journalism. Fee \$12 each Session

This course is planned for beginners.

**Stenography e14—Elementary.** 3 points Spring Session. Mr. W. E. HARNED

4:15-5:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Fee \$18

This course is planned for beginners and should be taken in conjunction with Typewriting e14.

**Typewriting e14—Elementary.** 2 points Spring Session. Mr. W. E. HARNED

5:15-6:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Fee \$12

This course is planned for beginners.

**Stenography e21-22—Elementary.** 2 points each Session. Mr. N. K. BRYANT

7:30-8:30 p. m., Monday, Wednesday, and Friday. Room 611 Journalism. Fee \$12 each Session

This course is planned for beginners and should be taken in conjunction with Typewriting e21-22.

**Typewriting e21-22—Elementary.** 2 points each Session. Mr. N. K. BRYANT

8:30-9:30 p. m., Monday, Wednesday, and Friday. Room 601 Journalism. Fee \$12 each Session

This course is planned for beginners.

**Stenography e24—Elementary.** 2 points Spring Session. Mr. F. A. BEIDLEMAN

8:30-9:30 p. m., Monday, Wednesday, and Friday. Fee \$12

This course is planned for beginners and should be taken in conjunction with Typewriting e24.

**Typewriting e24—Elementary.** 2 points Spring Session. Mr. F. A. BEIDLEMAN

7:30-8:30 p. m., Monday, Wednesday, and Friday. Fee \$12

This course is planned for beginners.

**Stenography e27-28—Intermediate.** 4 points each Session. Mr. E. J. RYAN  
7:30-9:30 p. m., Monday, Wednesday, and Friday. Room 609 Journalism. Fee \$24 each Session

This course is planned for students who have completed Stenography e21-22 or e24 or the equivalent. It includes dictation or speed practice, transcription of shorthand notes either on the typewriter or in pencil, and speed practice on the typewriter.

## TYPOGRAPHY

**Typography e1—Proof-reading and the preparation of manuscript.** 2 points Winter Session. Mr. J. D. GABLER

4:30-6:10 p. m., Thursday. Room 609 Journalism. Fee \$12

A brief outline of the history of typography will be followed by a practical explanation of present-day printing methods and a description of the different systems of hand and machine type-setting employed in modern establishments. Detailed instruction will be given in the preparation of manuscript for the compositor and in proof-reading. The work in proof-reading will include drill in the actual correction and revision of galley, page, and final proofs, with special attention to spelling, correct division of words, and uniformity in punctuation, capitalization, abbreviations, and minor matters of style. The work is planned to be of special value to authors, editors, secretarial students, and others who may be called upon to prepare manuscript for the printer.

## VOCATIONAL GUIDANCE

**Vocational guidance e1-2—Vocational guidance of girls.** 2 points each Session. Dr. MABEL L. ROBINSON

7-8:40 p. m., Friday. Room 610 Journalism. Fee \$12 each Session

The aim of this course is to induce a more scientific attitude toward advisory work and to give a sound basis for counseling.

The course will include a survey of the field of labor for the place occupied by women; a study of the development and achievements of vocational guidance in the United States as a basis for discussion of methods; a study of the different educational levels from which girls enter vocations and the value at each level of educational guidance; an analysis of the various



elements of vocational guidance; the relation of the school curriculum, psychological tests, self-analysis, etc., to the choice of a vocation; an analysis of vocational fields open to girls; a discussion of methods practical for advisers.

This course will count for credit with the Board of Education of New York toward promotion and toward a principal's or assistant principal's certificate.

## ZOOLOGY

**Zoology e1a-2a—Elementary biology and zoology.** Lectures and laboratory. Credit I, IV. 2 points each Session. Professor J. H. MCGREGOR and Dr. H. J. MULLER

1:45-2:35 p. m., Saturday; laboratory, 2:40-4:30 p. m., Saturday. Room 619 Schermerhorn. Fee \$12 each Session

The earlier part of this course is designed to give the student an elementary knowledge of the basic principles of biology and the general physiology of organisms. Protoplasm, the cell, unicellular organisms, plant and animal in relation to each other and to the inorganic world are the chief topics discussed in the Winter Session. The Spring Session is mainly devoted to the study of the structures and adaptations of some of the more important groups of animals, with dissection of types in the laboratory. Among the types studied may be mentioned amoeba, paramecium, hydra, earthworm, lobster, grasshopper, clam, and frog. Practically equivalent to Zoology 1 in Columbia College. This course should be supplemented by Zoology e3-4 to form the one year of biology required by law for pre-medical students.

A text-book will be used and collateral reading assigned.

Prerequisite: Natural science A, or elementary chemistry or physics.

**Zoology e3-4—Vertebrate zoology and evolution.** Lectures and laboratory. Credit I, IV. 2 points each Session. Professor J. H. MCGREGOR and Dr. H. J. MULLER

Monday, 7-9:40 p. m., lecture 7-7:50; laboratory, 7:50-9:40. Room 619 Schermerhorn. Fee \$12 each Session

Equivalent to Zoology 2 in Columbia College and designed to follow Zoology e1a-2a, together with which it fulfils the requirement in biology for pre-medical students. The course begins with the study of the simpler vertebrates, and proceeds to the higher forms through study and dissection of types in ascending order of complexity. The more important laboratory types are amphioxus, dogfish, pigeon, and rabbit. The aim of the course is to trace the evolution of vertebrate structure, including that of man. Several of the later lectures are devoted to the chief theories regarding the method of evolution.

Prerequisite: Zoology e1a-2a should precede this course, but failing this may be taken concurrently with it.

## PRACTICAL ARTS

### Officers of Administration for Extension Teaching in the School of Practical Arts

JAMES EARL RUSSELL . . . . .	Dean of Teachers College
MAURICE A. BIGELOW . . . . .	Director of School of Practical Arts
CLIFFORD B. UPTON . . . . .	Secretary of Teachers College
CHARLOTTE A. FRANCIS . . . .	Adviser to Extension Students in Practical Arts

The School of Practical Arts of Teachers College, in cooperation with the University Department of Extension Teaching, offers certain courses of instruction to qualified students who have not matriculated in any part of Columbia University as candidates for degrees. Such non-matriculated students will be admitted only to Practical Arts classes which are designated e (extension) or esp (extension special). The permission of the departments concerned must be obtained before registering for extension courses marked with \* (e. g., **\*Cookery e2**).

Practical Arts extension courses which are announced as having Credit IV may be credited toward the Bachelor of Science degree if satisfactorily completed by non-matriculated students who afterwards matriculate in the School of Practical Arts. The possible credit in points is stated in the description of courses.

Practical Arts extension special courses (marked esp: e. g., **Cookery esp 42**) are intended for popular instruction and cannot be credited toward degrees or entrance requirements.

The extension courses in practical arts are not open to women under twenty-one years of age who do not reside with their parents or relatives.

An extension student may not register for more than 8 points per Session in any one department of the School of Practical Arts.

**Matriculated students of Teachers College or of other parts of the University who wish to register for part-time programs should choose courses from the Announcement of the School of Practical Arts.**

**Registration for Practical Arts extension courses.** Students register for Practical Arts extension courses at the office of the Registrar, University Hall, Columbia University. Information concerning such courses may be obtained at Table E in the office of the Secretary of Teachers College daily 9 a. m.-12 m., and 2-4 p. m., except Saturday afternoon; and also 7-8 p. m., on the evenings when courses begin.

**In case of courses marked with \* a limited number of non-matriculated or extension students whose preparation is equal to that of regular students in these courses may be admitted if there are vacancies after 2 p. m. on September 23 or February 3. The instructor or adviser must be consulted before registration, and written permission obtained.**

Changes of program, such as dropping or adding courses, can be made only at the Registrar's office in University Hall, where the complete records are kept on

file. Permission to add courses marked with \* must be obtained from the instructor or adviser before changing programs at the Registrar's office.

*Number of students required* in classes is indicated in descriptions of certain courses. Such classes may be discontinued if the required number of students are not registered before the time for the second lesson.

*Limited classes.* Many classes for practical work are limited as to number of students. Such classes are indicated by the letter L affixed to the course number (e. g., \*Cookery e2L). Extension students must reserve places by personal application to the clerk in charge of extension classes, Desk E, Secretary's Office, Teachers College. Reservations must be made at the time of registration. Places will not be held for students who do not report to the instructor at the first lesson. In case of withdrawal from courses which have a required minimum registration, no fees will be returned.

Students who register in the Winter Session for courses which extend throughout the year must at the beginning of the Spring Session call at Desk E, Secretary's Office, Teachers College, and arrange to renew their registrations. Fees are payable at the Office of the Bursar, University Hall.

Admission of extension students to Practical Arts classes with Credit IV will not be permitted after Saturday, October 4, unless for reasons of weight special permission for registration without credit is granted by the Director of the School of Practical Arts.

The University fee of \$5 per year is charged all extension students who register for Practical Arts courses marked e, but not to those who take only the popular lecture courses marked esp.

Unless special dates are mentioned in the following pages, all courses in Practical Arts are on the regular schedule of the School of Practical Arts, beginning Wednesday, September 24, 1919, for the Winter Session and Wednesday, February 4, 1920, for the Spring Session.

Special registration hours for extension students in Practical Arts for the Winter Session are Tuesday and Wednesday, September 23 and 24, 4 to 6 p. m., Saturday, September 27, 9 to 12; and for the Spring Session, Tuesday and Wednesday, February 3 and 4, 4 to 6 p. m., and Saturday, February 7, 9 to 12.

The attention of students is called to the fact that the numbers of courses and many details in the statement of the classes and hours are different in this section of the Announcement from those found on the preceeding pages.

### \* PRACTICAL SCIENCE

Laboratory ticket: Students in all laboratory courses in the School of Practical Arts are required to purchase from the Bursar of Teachers College a laboratory breakage ticket, good for all science departments, price \$2. Unused coupons are redeemable at the end of any Session.

#### *Biology*

**\*Biology e4L—Human biology.** Recitations, lectures, and laboratory work. Credit IV. 4 points. Fee \$24. Miss STACKPOLE and assistant  
Section I—2:10–5 p. m., Monday and Wednesday, Winter Session

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.



Section VI—2:10-5 p. m., Tuesday and Thursday, Spring Session  
Limited sections, Room 421 T. C.

An introductory study of human structure, functions, development, and hygienic relations on a biological basis.

**\* Biology e4x—Biology for sex-education.** Credit IV. 1 point Spring Session, when taken supplementary to any course in hygiene or biology. Fee \$6. Open only to women. Miss STACKPOLE  
5:10-6 p. m., Monday, Room 421 T. C.

A series of fifteen illustrated lectures and laboratory demonstrations dealing with the anatomical, physiological, embryological, and bacteriological facts of biology which are necessary for understanding sex-education.

**\* Biology e51-52—Biological nature-study.** Lectures, laboratory work, field work, and reading. Credit IV. 2 points each Session. Fee \$12 each Session. Professor BROADHURST and Miss STACKPOLE  
3:10-5 p. m., Monday and Wednesday, Room 423 T. C.

This course is a general introduction to the nature-study of common animals and plants. The Winter Session is chiefly plant nature-study, while the Spring Session is largely devoted to animals. The names, life-histories, habits, relations to man, and other facts of popular interest concerning living things are emphasized. Trees and forestry, cultivated plants, wild flowers, birds, insects, domesticated animals, and other materials important in nature-study are selected for study. Both Sessions are essential for teachers of nature-study and biology, but general students may register for either Session.

**\* Biology e57L—Elementary microbiology (including bacteriology).** Lectures and laboratory work. Credit IV. 2 points. Fee \$12. Professor BROADHURST and assistant

Special Section VII—9-11:50, Saturday. For the convenience of part-time students the laboratory work and demonstration are both given on Saturday. Lecture, 3:10, Friday, unless special arrangements are made with the instructor. Winter Session only. Requires a registration of fifteen students

This course deals with bacteria, molds, yeast, and other micro-organisms, selecting for most attention the forms which affect everyday life. The bacteriological problems of personal and public hygiene and sanitation are included. Many of the studies directly involve important problems of home economics.

Prerequisite: Elementary biological laboratory study.

### *Chemistry*

**\* P. A. Chemistry e3—Brief course for beginners in household arts.** Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss FRANCIS and Miss HONEYWELL

Section I—9-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session, Room 400 T. C.

Section V—9-11:50 a. m., Wednesday and Saturday, Winter Session  
Each section requires fifteen students

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

An abbreviated course for students beginning the study of cookery, nutrition, or household administration. If students who take this course later wish to enter Chemistry 31 or 41, they must complete Chemistry 2 in Teachers College.

**\* P. A. Chemistry e3a-3b**—Section III-IV of the above course. 4 points for the year. Fee \$16 each Session. Requires fifteen students  
7:20-10 p. m., Tuesday, Room 400 T. C.

This section is an adaptation of the above course intended especially for nurses or those who intend to study nursing and who wish a beginning course in chemistry.

**\* P. A. Chemistry e23L**—Brief course in household and food chemistry. Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss FRANCIS and assistant

Section I—2:10-5 p. m., Monday and Wednesday, Winter Session. Repeated as

Section II—Spring Session

Limited sections

This brief course, preparatory to Nutrition 2, is intended for students of nursing, household administration, clothing, and hygiene who have not time for all the courses of the series, Chemistry 1-2, 31 or 41, 51, Nutrition 71, which are required in majors in cookery and nutrition. It will include selections from Chemistry 31, and cannot be credited in addition to 31 or as a substitute for that course.

Prerequisite: Chemistry 3 or equivalent.

**\* P. A. Chemistry e25**—Food industries. Lectures, readings, and demonstrations, varied with excursions to manufacturing establishments and reports on the processes inspected. Credit IV. 3 points. Fee \$18. Professor VULTÉ and Miss VANDERBILT

Section I—10-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session

Section III—10-11:50 a. m., Monday and Friday, Winter Session. Repeated as

Section IV—Spring Session

Room 400 T. C.

The lectures describe the preparation of the various staple foods, from the raw state to the finished product in marketable form and include a discussion of the composition and cost of the available materials. Among the various subjects considered are the cereals, flours, meals, starch, bread, sugars, meats, edible oils, dairy products, tea, coffee, chocolate, alcoholic beverages, spices, and condiments. The processes of drying, salting, smoking, canning, and preserving are described. Adulteration and substitution are also considered.

Prerequisite or parallel: A general course in chemistry.

**\* P. A. Chemistry e31L**—Household chemistry. Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Professor VULTÉ, Miss VANDERBILT, and Mrs. MCGOWAN

Section III—2:10-5 p. m., Tuesday and Thursday, Winter Session. Repeated as

Section IV—Spring Session

Limited sections. Room 405 H. A.

This course includes (a) laboratory study of composition, properties, and purification of water; effect of various cooking utensils on food products; economy of fuels; carbohydrates, testing of flour, meals, cereals, fruits, and similar products; fats, soap-making, soap powders,

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

scouring agents, and polishes; proteins, examination of eggs, meat extracts, gelatine, milk, and cheese; baking powders; tea, coffee, and cocoa; (b) lectures, demonstrations, and recitations on important organic compounds of the aliphatic and aromatic series, such as hydrocarbons, alcohols, aldehydes, ketones, acids, esters, amines, amides, amino acids, purin bases, etc.

Prerequisite: General chemistry equivalent to Chemistry 1-2. Chemistry 3 does not admit to 31. Chemistry 25 is a desirable supplement to 31.

### *Hygiene*

**\* P. A. Hygiene e72—Personal and general hygiene.** Lectures, recitations, and required readings. Credit IV. 2 points. Fee \$12. Professor WILLIAMS  
11 a. m., Wednesday and Friday, Spring Session

This course is intended for advanced students and is not open to Freshmen and Sophomores. It will consider the principles of hygiene, both personal and general, and their practical application to everyday life.

**\* P. A. Hygiene e75—Sanitary science.** Lectures and demonstrations. Credit IV. 2 points. Fee \$12. Professors WINSLOW and BROADHURST  
Lecture, 4:10-5:30 p. m., Monday, Winter Session  
Recitation, 5:10-6 p. m., Wednesday, Winter Session

This course includes a general survey of the fundamental principles of sanitary science and disease prevention and their application to water supply, milk, and general food supply, disposal of sewage and garbage, air supply, the problems of tenement and factory sanitation, and the spread and control of infectious diseases. Brief attention will also be given to the problems of rural hygiene, the preventive factors in constitutional disease, personal hygiene, and the social and economic aspects of health problems. The functions and methods of boards of health will be discussed and the use of vital and sanitary statistics.

Recommended preparatory or parallel course: Biology 57.

**\* P. A. Hygiene e76—Industrial hygiene.** Lectures and field work. Credit IV. 2 points. Fee \$12. Professor WINSLOW  
4:10-5:30 p. m., Monday, Spring Session. Hours for field work, 3:10-6 p. m., on six Mondays during the Session

This course deals with the dangers to life and health in factories and workshops, and with the practical work of sanitary inspection as applied to industrial establishments. It will include a brief discussion of factory accidents, a consideration of industrial poisonings from lead, phosphorus, and other metals, and from the inhalation of noxious gases, and with the effect of factory dust and vitiated air upon health, and particularly upon the prevalence of tuberculosis. Emphasis will be laid upon possible preventive measures and the inspection work will furnish a basis for judging sanitary conditions.

### *Mathematics*

**\* P. A. Mathematics e31-32—Industrial mathematics.** Credit IV. 2 points each Session. Fee \$12 each Session. Mr. BRECKENRIDGE  
11 a. m.-12:50 p. m., Saturday, Room 211 T. C.

This course is designed especially for teachers of mathematics or mechanic arts in technical or trade schools.

Prerequisite: College entrance mathematics or an equivalent experience in mechanic arts.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.



*Practical Arts Physics*

**\* P. A. Physics e1L—General course in applied physics.** Lectures, excursions, and laboratory work. Credit IV. 4 points. Fee \$24. Mr. Good and assistants

Section V—3:10–6 p. m., Monday and Wednesday, Winter Session. Repeated as Section VI—Spring Session

Limited sections. Room 408 T. C.

This course includes a series of exercises in the study of practical appliances, and serves as a basis for a scientific interpretation of physical experience.

A considerable part of the work involves the construction, operation, and uses of such appliances as clocks, pulleys, balances, pumps, elevators, water-motors, water systems, steam-engines, gas-engines, water heaters, the automobile, musical instruments, the camera, the microscope, the projectoscope, electric lighting, household electric utensils, ammeters, voltmeters, wattmeters, electric cells, storage batteries, the telegraph, the telephone, motors, generators, wireless, and the X-ray.

**\* P. A. Physics e31L—Household physics.** Lectures, excursions, and laboratory work. Credit IV. 2 points. Fee \$12. Mr. Good and assistants

Section I—9–11:50 a. m., Thursday, Winter Session

Section II—9–11:50 a. m., Wednesday, Spring Session

Limited sections. Room 408 T. C.

The purpose of this course is to teach how to use and care for the equipment of homes and institutions, with particular reference to mechanical and sanitary aspects. It will show how modern appliances may be either nuisances or sources of comfort, according as one can or cannot make intelligent use of them. The course will deal with water supply, plumbing, sewers, heating, ventilation, refrigeration, gas supply, stoves, lamps, electric lighting, cooking and heating, telephone, elevators and dumbwaiters, machinery for dishwashing, laundry, and cleaning, fire extinguishers, and general repairs.

Prerequisite: Physics e1.

**\* Industrial Arts e57—Automobile mechanics.** 4 points. Mr. Good and assistants. For description, see Industrial Arts

**\* P. A. Music e32—Sound as related to music.** 2 points. Mr. Good and others. See description in P. A. Music

**FINE ARTS \****Art Appreciation and History*

**\* Fine Arts e69-70—Art appreciation. History of art.** Lectures, reports, and required reading. Credit IV. 2 points each Session. Professor Dow  
4:10–5:30 p. m., Tuesday, Horace Mann Auditorium. Fee \$12 each Session

Appreciative study of painting, sculpture, architecture, and design, in historical development. Lantern illustrations.

First part of course: nature of space arts, principles common to them all; art structure, composition of line and mass, color-theory, art criticism.

In the historical study, general chronological order is followed, but facts as to dates and periods are to be derived from the text-book, Reinach's *Apollo*. Reading is tested by written exercises.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

In connection with museum and library studies, reports will be required upon some of the following subjects: The art of the American Indians, especially of those of the Southwest, Peruvian textiles and handicrafts, art of the Aztecs, Maya architecture and decoration, Egyptian painting and handicrafts, Coptic textiles, early Greek, Cypriote and Minoan design, Mohammedan design and craftwork, Gothic buildings, ancient and modern, Gothic sculpture, early Italian paintings, American and present-day arts. These reports may be illustrated with small photographs, tracings, or sketches.

The lectures of this course, without required reports, readings, and examinations, are open without credit to auditors who register for Fine Arts esp 69-70. Fee \$12.

### Art Structure

**\* Fine Arts e1—Art structure A.** For teachers, designers, illustrators, craftsmen, and painters. Lectures and studio work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Professors DOW and CORNELL, Miss TANNAHILL, and Miss NORTHRUP

Section I—9-11:50 a. m., Monday and Wednesday, Winter Session

Section II—2:10-5 p. m., Monday and Wednesday, Spring Session

Section III—9-11:50 p. m., Tuesday and Thursday, Winter Session, Room 430 Macy

Section IV—9-11:50 p. m., Monday and Wednesday, Winter Session, Room 507 H. A.

An evening class will be organized for Monday, Wednesday, and Friday evenings, 8-10, Winter Session, if twenty-five students apply

The courses in art structure stand for (a) *freedom*—to use *line, mass, color*; (b) *power*—to appreciate fine qualities of proportion, arrangement, and color, and to obtain these qualities in creative art work.

Outline: 1. Principles of art—how lines, masses, colors may be put together to produce fine quality—spacing, rhythm, grouping. 2. Original design—choosing and combining lines, masses, colors. Exercises with brush and ink, charcoal, colored crayons, water-color. Position of body, breathing, control of hand, freedom of movement, power in execution. Study of masterpieces. 3. Use. Applications in painting, illustrating, designing, modeling, and handicraft.

This course offers appreciative experience of value to students in Education, Administration, Industrial and Household Arts, and other departments.

Reading: Dow's *Composition and Theory and Practice of Teaching Art*.

**\* Fine Arts e2—Art structure B.** Continuation of Fine Arts 1. Lectures and studio work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Professor CORNELL, Miss TANNAHILL, and Miss NORTHRUP

Section I—9-11:50 a. m., Monday and Wednesday, Spring Session

Section II—9-11:50 a. m., Tuesday and Thursday, Spring Session, Room 430 Macy

Section III—9-11:50 a. m., Monday and Wednesday, Spring Session, Room 507 H. A.

An evening class will be organized for Monday, Wednesday, and Friday evenings, 8-10, Spring Session, if twenty-five students apply

Room 430 Macy

Principles of composition: line and dark-and-light harmonies in pattern, lettering, and landscape; how to study color; harmony of colors in design, pictures, costumes, printing, the

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

home. Study of historic examples, primitive art, Japanese art. Special study, under guidance, of museum art collections.

Applications in decoration, illustration, painting, hand work, and occupations.

Reading as in Fine Arts 1, also Day's *Pattern Design*, Johnston's *Writing, Illuminating, and Lettering*.

Prerequisite: Fine Arts 1. Design or drawing in other schools cannot be accepted as equivalent of Fine Arts 1 or 2.

**\* Fine Arts e3—Freehand drawing.** Credit IV. 2 points. Special fee \$12. Not charged at \$6 per point. Professor MARTIN

Section I—2:10-4 p. m., Tuesday and Thursday, Winter Session

Section III-IV—4:10-6 p. m., Wednesday, throughout the year. (Register for Fine Arts e3a and e3b below.)

Each section requires fifteen students

Outline, relief, light and shade. Perspective. Drawing from still life, flowers, and casts; landscape sketching. Charcoal, brush, pencil. Copying of masters' drawings. Assigned reading.

**\* Fine Arts e3a-3b—Section III-IV of above course.** 2 points for the year. Fee \$6 each Session

4:10-6 p. m., Wednesday

**\* Fine Arts e49-50—Art structure Ca.** Lectures and studio work. Credit IV. 1½ points each Session. Special fee \$12 each Session. Not charged at \$6 per point. Professor DOW and Miss TANNAHILL

9-11:50 a. m., Saturday, Room 430 Macy

Three hours outside work per week

An abridged course in theory and principles of art. (See Fine Arts e1, 2, 51-52.) For teachers, designers, illustrators, craftsmen, and painters.

Exercises in composition. Brush drawing and painting; charcoal studies; color in theory and practice. Assigned reading and museum work.

**\* Fine Arts e75-76—Lettering and color printing.** Credit IV. 3 points each Session. Miss TANNAHILL

2:10-5 p. m., Tuesday and Thursday. Special fee \$24. Not charged at \$6 per point. Room 430 Macy

Lettering: Composition of lettered spaces. Styles of letters, type faces, beauty of form in letters, legibility. Writing with reed-pen, steel pen, brush, and stick. Designing of posters, cards, title-pages, page decorations, florets.

Printing: A limited number of accepted designs may be cut on linoleum and proofs printed on a hand-press.

Reading: Johnston's *Writing, Illuminating, and Lettering*; Goudy's *The Alphabet*; Dow's *Composition*. Open only to those who have completed Fine Arts 1 and 2 and whose programs are approved by Professor Dow.

**\* Fine Arts e75x-76x—Poster design.** Lectures and studio work. 2 points each Session. Professor Dow, Instructors, and special lectures

2:10-5 p. m., Friday, and hours to be arranged

The Poster: its purpose and use. Appeal and response. Designing of posters. Color schemes. Papers, inks, the printing press. Engraving on linoleum. Printing of simple designs. Printing with wood block alphabets and florets. Study of Japanese prints and poster

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.



collections. Special note: Making of posters for college use will be part of the *required* work of this class.

Reading: Price's *Poster Art*; Goudy's *The Alphabet*; Hollingworth's *Psychology of Advertising*; Dow's *Composition*.

Open only to those who have completed Fine Arts 1, 2, 3, 4, and 75. Design or drawing in other schools cannot be accepted as equivalent of Fine Arts 1 and 2.

**\* Fine Arts e25-26—Clay modeling and pottery.** 2 points each Session. Special fee \$16 each Session. Not charged at \$6 per point. Mr. UPJOHN  
 Section I—3:10-5 p. m., Wednesday and Friday  
 Section II—2:10-4 p. m., Tuesday and Thursday  
 Section III—10-11:50 a. m., Tuesday and Thursday  
 Each section requires fifteen students

Clay-Modeling: Modeled and incised tiles and panels. Mouldings and medallions in low and high relief. Sketching of small figures in clay. Modeled heads, from casts. Colored relief, casting in plaster. Mould-making: one-piece, chip-and-piece, and gelatine moulds.

Pottery: Making of shapes. Coiling, building, pressing, casting. Making of pottery moulds. Decoration with underglaze colors. Sprigging, biscuit-firing, glazing, and gloss firing.

Reading: Cox's *Pottery*; Binns' *Potter's Craft*; Jewitt's *History of Pottery*.

Prerequisite: Fine Arts e1, e2.

**\* Fine Arts e53-54—Drawing and painting.** Credit IV. 2 points each Session. Special fee \$16 each Session. Not charged at \$6 per point. Professor MARTIN

Section I—9-10:50 a. m., Tuesday and Thursday, Room 426 Macy

Section II—2:10-4 p. m., Wednesday and Friday

Each section requires fifteen students

Expression by line, modeling in line, shading, gradation, values, perspective, modeling in tone, technique of charcoal. Painting in oil and water-color, figures, animals, landscapes. Copying in museums.

Reading: Knowlton's *Hints on Sketching from Nature*; Ross' *Drawing and Painting*.

Prerequisite: Fine Arts 3 or equivalent.

**\* Fine Arts e53a-54a—Drawing and painting.** 1 point each Session. Special fee \$8 each Session. Not charged at \$6 per point. Professor MARTIN  
 9-10:50 a. m., Saturday, Room 426 Macy  
 Requires fifteen students

Freehand drawing in charcoal and pencil from objects, cast, still life, and costumed figure.

Shading, gradation, values, texture, and tone-modeling. Painting in oil and water-color.

Note: Fine Arts e54a, advanced, alternates with e53a.

Prerequisites: Fine Arts e3 or equivalent.

**\* Fine Arts e81a-82a—Art structure Da.** Lectures and studio work. Credit IV. 1½ points each Session. Special fee \$12 each Session. Not charged at \$6 per point. Professor DOW and Miss TANNAHILL  
 Not given in 1919-1920

An advanced course in composition, with applications in designing and hand work. For teachers of occupations, designers, illustrators, craftsmen, and painters. Brush drawing. Painting in flat tones. Charcoal studies. Landscape composition. Color. Wood block printing. Stenciling. Copying in museums. Assigned reading.

Prerequisite: Fine Arts e49-50 or 51-52.

Fine Arts e81a-82a alternates with e49-50.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

**\* Fine Arts e83-84—Painting.** Credit IV. 4 points each Session. Special fee \$32 each Session. Not charged at \$6 per point. Professor BEMENT  
9-11:50 a. m., Monday, Wednesday, and Friday, Room 426 Macy

Drawing and painting from life, costumed model. Compositions of figures and landscapes for mural painting and illustration. Portrait and landscape painting. Copying in museums. Studio and outside work.

Reading: Vanderpoel's *The Human Figure*; Dr. Rimmer's *Anatomy*; Alfred East's *Landscape Painting*.

Prerequisites: Fine Arts 51-52, 53-54, or equivalents.

**\* Fine Arts e83a-84a—Painting.** 1½ points each Session. Special fee \$12 each Session. Not charged at \$6 per point. Professor MARTIN  
9-11:50 a. m., Saturday, Room 426 Macy  
Requires fifteen students

Still-life painting, landscape painting, work from costumed model.

Advanced course following Fine Arts e49-50 and e53a-54a.

**\* Fine Arts e93-94—Life class for women.** Credit IV. 3 points each Session. Special fee \$24 each Session. Not charged at \$6 per point. Professor BEMENT

9-11:50 a. m., Monday, Wednesday, and Friday, Room 426 Macy

Open only to those who have satisfactorily completed Fine Arts 53-54.

Drawing and painting from living model. Two criticisms per week.

**\* Fine Arts e97-98—Figure construction.** Credit IV. 2 points each Session. Special fee \$16 each Session. Not charged at \$6 per point. Professor BEMENT  
2:10-5 p. m., Wednesday  
Requires fifteen students

A course in drawing and sketching the human figure, adapted to the requirements of students in costume design.

Reference books: Rimmer's *Anatomy*; Vanderpoel's *The Human Figure*; Poynter's *Drawings*.

### *House Design*

**\* Fine Arts e14—Home furnishing.** Lectures and studio work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point  
Section I—9-11:50 a. m., Monday and Friday, Winter Session, Room 505 H. A.  
Section II—9-11:50 a. m., Tuesday and Thursday, Spring Session  
Requires fifteen students

Studies in art structure and design in relation to the furnishing of the home. Good spacing and arrangement, leading lines, rhythmic lines, light-and-dark spaces, color combinations and schemes. Simple exercises with charcoal, brush, and crayon. Excursions to museums, studios, and shops.

Assigned reading.

**\* Fine Arts e80—Home furnishing, advanced.** Lectures, readings, and reports. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point  
9-11:50 a. m., Monday and Friday, Spring Session, Room 505 H. A.  
Requires fifteen students

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

Development of the house, artistic and practical. Each phase will be presented by an expert. The materials to be used will be studied in three ways: (a) contact, (b) observation, (c) illustrated lectures.

Prerequisites: Fine Arts 1, 2 (or 11, 41), 3, Drawing 3-4.

### *Costume Design*

**\* Fine Arts e21—Costume design.** Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss WILMOT

Section I—9-11:50 a.m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

For Saturday section (V-VI) register for Fine Arts e21a-e21b below  
Each section requires fifteen students

**\* Fine Arts e21a-21b—Same as e21.** Fee \$12 each Session. Miss NORTHRUP  
9-11:50 a.m., Saturday, throughout the year, Room 507 H. A.

Design in costume; rhythm of line; harmonies of tone. Sketching gowns and hats; original designs for gowns and hats for various types. Pencil, water-color, colored chalks. For teachers in household arts education and in costume design, and for professional designers.

Prerequisites: Fine Arts 1, 2, and Clothing 33.

**Fine Arts e182—Design for school and community festivals.** 1 point.  
Fee \$6. Miss NORTHRUP

7:10-9 p.m., Tuesday, Winter Session, Room 507 H. A.

Requires fifteen students

Simplified art course for those who expect to take part in festivals or plays. Color harmonies and designs for stage setting and costumes. Stenciling, wood block printing, tie dyeing. Study of psychological effects of color. Work on Teachers College Festival.

### *Art Industries*

**\* Fine Arts e31-32—Design in the art industries.** Lectures and studio work. Credit IV. 3 points each Session. Professors DOW and MARTIN

9-11:50 a.m., Monday and Wednesday, Room 435 Macy. Fee \$24 each Session. Not charged at \$6 per point

Requires fifteen students

Instruction in principles and practice of design. Training for professional designers and craftsmen. Drawing with brush and ink. Painting in fresco and water-color. Line design and space filling. Tone and masses. Color theory, color scheming. Original designs for metal, wall-paper, wood, pottery, textiles, and stained glass.

Reading: Dow's *Composition*; Day's *Ornament and Its Application and Pattern Design*; Hicks' *The Craft of Handmade Rugs*; Hooper's *Handloom Weaving*.

Prerequisites: Fine Arts 1, 2.

**\* Metalworking e1—Hammered metal.** Credit IV. 2 points Winter Session. Special fee \$16. Not charged at \$6 per point

9-10:50 a.m., Tuesday and Thursday, Rooms 26 and 243 Macy

Requires fifteen students

Instruction in hammered and raised work. Processes include forming of bowls, trays, boxes, candlesticks, furniture fittings, and other shapes, and their enrichment by repoussé; coloring of metals by patinas. Design is required in planning the projects.

Students should elect Fine Arts 1 parallel, and if possible Fine Arts 31-32.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p.m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.



**\* Metalworking e4—Metalworking for industrial arts.** 2 points. Special fee \$16. Not charged at \$6 per point

9-11:50 a. m., Saturday

Requires fifteen students

**\* Metalworking e5-6—Jewelry.** Shopwork. Credit IV. 2 points each Session. Special fee \$16 each Session. Not charged at \$6 per point

Section I—2:10-4 p. m., Monday and Wednesday

Section II—4:10-6 p. m., Monday and Wednesday

Each section requires fifteen students

Rooms 26 and 243 Macy

Instruction in making buckles, fobs, chains, necklaces, pendants, rings, setting of stones, casting of silver; polishing and finishing of metals; coloring by chemical and electrolytic methods. Design is required in planning projects. Part of the course has been simplified and rearranged for students in Occupation Therapy.

Prerequisites for Sections I and II: Metalworking 1, 2; and a design course, which may be taken parallel.

### *Art Photography*

**\* Fine Arts e7-8—Art photography I.** Lectures and laboratory work. Credit IV. 2 points each Session. Mr. WHITE

4:10-6 p. m., Wednesday, and 9-10:50 a. m., Saturday, Room 325 T. C.

Extra hours desirable but optional. Special fee \$16 each Session. Not charged at \$6 per point

Begins October 1. Requires fifteen students

Application of art to photography, and instruction in the use of the camera. Field and laboratory work, developing, printing, and mounting.

Practice in the use of the camera in the field and in the studio on Saturday mornings.

Recommended preparatory: Fine Arts 1, 2.

**\* Fine Arts e37-38—Art photography II.** Lectures and laboratory work. Credit IV. 2 points each Session. Mr. WHITE

4:10-6 p. m., Thursday, and 9-10:50 a. m., Saturday, Room 325 T. C. Extra hours desirable but optional. Special fee \$16 each Session. Not charged at \$6 per point. Begins October 2. Requires fifteen students

Making negatives, positives, and enlarged negatives, the manipulation of negatives and printing papers. Coating of papers. Photography in landscape, architecture, illustration, and portraiture. Mounting and framing. Lantern-slide making for lecturers.

Practice will be offered in the use of the camera in the field and in the studio on Saturday mornings and at other times in the studio by appointment.

Prerequisite: Art photography I or equivalent.

### *Mechanical Drawing*

Certain specially applied courses in mechanical drawing offered in the School of Practical Arts are open to Extension students who have completed the courses described in the annual Announcement. See the *Announcement of the School of Practical Arts* and consult the Director of that School

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

Other and more advanced courses in fine arts described in the *Announcement of the School of Practical Arts* may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor Dow.

### HOUSEHOLD ARTS \*

(See Cookery (below), Nutrition and Food Economics (p. 117), Textiles and Clothing (p. 117), Household Arts—Fine Arts (p. 111), Household Administration (p. 122).)

#### *Cookery*

The classes in cookery meet in Rooms 201-214 Household Arts Building, Teachers College

*Costume* for foods and cookery laboratories: Students are requested to wear white cotton clothing; plain skirt; tailored waist; plain white collar; no color in ties or bows of neckwear; long plain white apron with bib (for laboratory only); little, if any jewelry

*Limited sections:* For all 'limited' courses (indicated by L following the number, e. g., **Cookery e2L**) students must reserve places before completing registration. See p. 103

Any limited section with less than fifteen students may be discontinued after the first lesson

**Cookery e1—Technology of cookery and food economics.** Lectures, demonstrations, and laboratory work. Credit IV. 2 points. Fee \$12. Professor VAN ARSDALE, Miss COLMAN, and Miss CONWAY

Section I—1:10-2 p. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

The purpose of this course is to develop skill in the technique of cookery by means of a systematic introduction to the principles, processes, and food materials involved.

This course is prerequisite or parallel to all courses in cookery.

Students are advised to take general chemistry and physics parallel.

\* **Cookery e2L—Elements of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Mrs. GUNN and Miss CONWAY

Section I—2:10-5 p. m., Tuesday and Thursday, Winter Session

Section II—2:10-5 p. m., Monday and Wednesday, Spring Session

Section III—9-11:50 a. m., Wednesday, and 2:10-5 p. m., Friday

Section IV—2:10-5 p. m., Tuesday and Thursday

Each section requires fifteen students. Limited sections

This course is for students of household administration, nursing and health, teachers of home-making, and others not majoring in foods and cookery. It includes a general survey of the elementary principles of cookery, with an introduction to planning and serving meals in the home. Elementary chemistry, physics, and biology are desirable preliminary or parallel courses. This course does not satisfy the prerequisites for other courses of cookery, unless so stated in the announcement, nor may it be credited in addition to Cookery 3 or 41.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. of September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

**\* Cookery e3L—Principles of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss STONE  
Section IX—X—Saturday, throughout the year. (Register for Cookery e3a and e3b below)

Section XI—7-9:50 p. m., Monday and Wednesday, Winter Session. Begins September 29

Limited sections. Each section requires ten students

The purpose of this course is to give a working knowledge of the general principles of cookery.

Prerequisite or parallel: General Chemistry and Cookery 1.

**\* Cookery e3a-3bL—Section IX—X of above course.** Credit IV. 3 points for the year. Special fee \$12 each Session

9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 27

**\* Cookery e41L—Home cookery and table service.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss FRAME and assistant

Section V—VI—Saturday, throughout the year. (Register for Cookery e41a and e41b below)

Section VIII—7-9:50 p. m., Monday and Wednesday, Spring Session. Begins February 9

Limited sections. Each section requires ten students

The purpose of this course is to give opportunity for practice in home cookery. It will include the study, planning, and cooking of breakfasts, luncheons, dinners, and suppers; and various methods of preparation and garnishing. It is intended for students who are planning to teach or to take charge of families where such work is required. It deals also with table service.

Prerequisite: Cookery 3.

Prerequisite or parallel: Cookery 1, Chemistry 25, and Biology 4. Nutrition 1 is strongly recommended as a parallel. Administration 21 is also recommended.

**\* Cookery e41a-41bL—Section V—VI of above course.** 2 points each Session. Special fee \$16 each Session

9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 27

**\* Cookery e43—Table service.** Lectures and laboratory work. 2 points. Mrs. GUNN

Section I—9-11:50 a. m., Wednesday, Winter Session. Repeated as

Section II—Spring Session

Section III—2:10-5 p. m., Friday, Winter Session. Repeated as

Section IV—Spring Session

The purpose of this course is to give instruction in table service to those who have had the equivalent to the home cookery in Cookery 41.

**Cookery e61—Lecture—demonstrations in the new cookery.** Credit IV. 3 points. Fee \$30. Miss SHAPLEIGH

Section I—9-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as

Section II—Spring Session

Each section requires fifteen students

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.



This course is intended to acquaint the student with the more complicated processes of cookery, more elaborate utensils, and a greater variety of flavorings, seasonings, and food materials. Special emphasis will be laid upon the use of a wide range of food materials and a comparison of new and old standards.

Prerequisite or parallel: Cookery 1.

Prerequisite: Cookery 3 and 41 or equivalents.

**\* Cookery e71L—Elementary cookery for invalids.** Lectures, demonstrations, and laboratory work. 2 points. Miss PEACOCK and Miss STONE  
Section I—9-11:50 a. m., Wednesday, Winter Session  
Limited class

This course is intended primarily for students of nursing and physical education who wish a course in the principles of cookery applicable to the care of the sick and who are not eligible to H. A. 133.

**\* Cookery e75L—Large quantity cookery.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss LA GANKE and associates

Section III—7-9:50 p. m., Monday and Wednesday, Winter Session. Repeated as Section IV—Spring Session. Begins September 29 and February 9

Limited class. Each section requires fifteen students

This course is designed to give practice in handling materials in large quantities for the large family or for small and large institutions, as hospitals, sanitariums, college dormitories, restaurants, etc. The course will include some practice in planning and serving of luncheons of varying costs to small groups as an introduction to larger work. The problem of minimum cost luncheons will be considered with reference to the demands of the cafeteria, the factory, and the school.

Prerequisites: Cookery 3, 4, and 41, or equivalents. Parallel: Courses in Administration and Nutrition.

**\* Cookery e81L—Practice in demonstration cookery.** 4 points. Fee \$32. Not charged at \$6 per point. Miss SHAPLEIGH and Miss BARROWS

Section I—9-11:50 a. m., Monday and Friday. Repeated as

Section II—Spring Session

Section III—2:10-5 p. m., Tuesday and Thursday, Winter Session

Limited sections. Each section requires fifteen students

This course aims to give practice for public lecture and demonstration for extension workers.

Prerequisite for extension students: experience in teaching cookery and nutrition.

**\* Cookery e90—History of cookery.** Credit IV. 2 points. Fee \$12. Miss SHAPLEIGH

Section I—2:10-4 p. m., Friday, Winter Session. Repeated as

Section II—Spring Session

Each section requires fifteen students

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Other and more advanced courses in Cookery, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor VAN ARSDALE

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

*Nutrition and Food Economics*

**\* Nutrition e1—Elements of nutrition and dietetics.** Lectures, recitations, and laboratory work. Credit IV. 2 points. Fee \$12. Miss MACLEOD, Miss BARTO, and Professor SHERMAN

Section I—9-11:50 a. m., Saturday, Winter Session. Repeated as

Section II—Spring Session

Rooms 400 Teachers College and 401 H. A.

Each section requires fifteen students

This course describes very simply the essentials of an adequate diet, and the nutritive properties of common food materials. The application of such knowledge to the feeding of individuals and family groups is discussed, with special reference to limitations of cost. Estimations of food values and preparation and service of practical dietaries constitute the laboratory work.

Prerequisites: An elementary knowledge of cookery equivalent to Cookery 3. Students who have not previously studied chemistry are strongly advised to take Chemistry 1 or 3A in the Winter Session as preparation for this course in the Spring Session.

**\* Nutrition e2L—Feeding the sick.** Lectures, recitations, and laboratory work. Credit IV. 2 points. Fee \$12. Professor ROSE and Miss BARTO

Section I—2:10-5 p. m., Thursday, Winter Session. Repeated as

Section II—Spring Session, Room 401 T. C.

Limited sections

This course is designed to supplement Nutrition 1 for students without the scientific foundation for 71. It includes a discussion of principles of general application in feeding the sick, methods of dietetic treatment for diseases of metabolism, laboratory practice in calculation and preparation of special dietaries.

Prerequisites: Nutrition 1 and Chemistry 23.

*Textiles and Clothing*

*Limited sections:* For all courses announced as 'limited sections' students must reserve places at the time of registration. See p. 103

**\* Textiles e31a—Textiles.** Lectures. Credit IV. 2 points. Fee \$12. Professor FALES

Section I—10-10:50 a. m., Tuesday and Thursday, Winter Session. Repeated as

Section II—Spring Session

Room 418 T. C.

This course considers the primitive form of the textile industries in order to make clear their later development; the present methods of carding, spinning, and weaving; the modern manufacture and finishing of cotton, wool, silk, linen, and other important fibers, and their properties and values in relation to their manufacture. This course may be elected separately but is prerequisite to the other parts of the course.

**\* Textiles e31b—Textile fabrics.** Lectures and laboratory work. Credit IV. 1 point supplementary to other textile work. Fee \$8. Professor FALES

Section I—2:10-4 p. m., Wednesday, Winter Session. Repeated as

Section II—Spring Session

Room 302 H. A.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

This course concerns itself with the identification and grading of textile materials, their names, kinds, prices, and widths; considers variation of weave in regard to beauty and strength; the use and value of cotton, silk, wool, and linen for clothing and household furnishing.

Prerequisite: Textiles 31a.

**\* Textiles e31c—Textile chemistry.** Laboratory work. Credit IV. 1 point supplementary to other textile or clothing work. Special fee \$8 each Session. Not charged at \$6 per point. Mrs. McGOWAN

Section I—10-11:50 a. m., Wednesday, Winter Session. Repeated as

Section II—Spring Session

Room 509 H. A.

Limited sections. Each section requires fifteen students

This course considers (a) the identification of fibers and substitute material by means of the microscope; (b) the chemical examination of fibers including tests to determine content of cloth and adulteration, and proper use of materials in relation to cleansing and laundering; (c) lectures, and laboratory experiments in dyeing.

Prerequisites: Textiles 31a, Chemistry 3 or its equivalent.

**Textile manufacturing**—See under Industrial Arts, p. 125

**\* Clothing e33—History of costume.** Lectures. Credit IV. 2 points. Fee \$12. Professor FALES

Section I—11-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session

This course includes a survey of ancient Egyptian, Grecian, early and modern French costumes. It aims to give practical information for the use of students and teachers of dress-making, costume design, and fashion illustration.

**\* Clothing e5L—Elementary clothing and handwork.** For teachers. Laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Miss WHITE and Miss EVANS

Section III—9-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as Section IV—Spring Session

Section IX-X—Saturday, throughout the year. Begins September 27. (Register for e5a-5bL below)

Limited sections. Each section requires fifteen students. Room 301 H. A.

This course includes practice in the following: the use of the sewing machine and its attachments; the making of fundamental stitches; the drafting and use of patterns; hand and machine sewing applied to simple garments; knitting, crocheting, darning, patching, and simple embroidery.

Students provide required material.

This course, or its equivalent, is prerequisite to all dressmaking courses.

Parallel or prerequisite: Fine Arts I or II.

**\* Clothing e5a-5bL**—Section IX-X of Clothing 5. Credit IV. 4 points for the year. Special fee \$16 each Session. Not charged at \$6 per point 9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 27

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.



**\* Clothing e15L—Drafting and dress design.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24 each Session. Not charged at \$6 per point. Miss BALDT and Mrs. NELSON

Section III—2:10–5 p. m., Monday and Friday, Winter Session. Repeated as Section IV—Spring Session

Section IX–X—Saturday, throughout the year. Begins September 27. (Register for e15a–15bL below)

Limited sections. Each section requires fifteen students. Rooms 304 and 305 H. A.

This course gives practice in the making of patterns by drafting, modeling, and designing. Foundation patterns of a shirtwaist, shirtwaist sleeve, skirt, fitted waist, fitted sleeve, and kimono blouse are drafted to measure, in materials, and fitted. From these other patterns are designed and modeled in paper, cambric, and cheesecloth. Good design is emphasized.

Students provide required materials; approximate cost, \$5.

This course is prerequisite to all other dressmaking courses.

**\* Clothing e15a–15bL—Section IX–X of Clothing 15.** Credit IV. 3 points for the year. Special fee \$12 each Session. Not charged at \$6 per point 9–11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 27

**\* Clothing e35L—Dressmaking, elementary.** For teachers. Laboratory work. Credit IV. 4 points. Special fee \$32 each Session. Not charged at \$6 per point. Miss BALDT

Section I—9–11:50 a. m., Monday and Friday, Winter Session. Repeated as

Section II—Spring Session

Also eight evening lessons. See Clothing e35b below

Room 304 H. A.

Limited sections. Each section requires fifteen students

This course includes eight evening tailoring demonstrations, and the cutting and making of a simple wash dress, a tailored silk shirt, a wool skirt, a lingerie blouse, and a net guimpe. Commercial patterns as well as those made and fitted in Clothing 15 are used.

Students provide required material; approximate cost, \$25.

Prerequisites: Clothing 5, 15. Fine Arts I or II.

**Clothing e35b—Tailoring demonstrations.** For teachers. Laboratory work. Credit IV. 1 point. Special fee \$8. Not charged at \$6 per point. Mr. GROSS  
Section I—7:30–9:30 p. m., Tuesday and Thursday, beginning November 13. Repeated as

Section II—Beginning March 5

Each section requires fifteen students

**Clothing e41L—Dress design.** For teachers. Demonstrations, discussions, and lectures. Credit IV. 1 point supplementary to other textiles and clothing work. Fee \$6. Miss EVANS

Section I—12–12:50 p. m., Saturday, Winter Session. Begins September 27, Room 301 H. A.

Requires fifteen students

This course includes demonstrations in draping blouses, skirts, and one-piece dresses.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

**\* Clothing e45L—Dress design.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Miss EVANS  
 Section I—2:10–5 p. m., Tuesday and Thursday, Winter Session. Repeated as  
 Section II—Spring Session  
 Section IX–X—Saturday, throughout the year. Begins September 27. (Register for e45a and e45b below)

Limited sections. Each section requires fifteen students. Room 305 H. A.

This course gives practical training in the application to costume of line, color harmony, dark and light, and texture. Historic costume is used as a source of inspiration for much of the work. Practice in using and adapting for different individuals and purposes designs from the current fashion magazines. All designing is done from patterns made in Clothing 15, and by modeling on the form to give practice in actual constructive design.

Students provide required materials; approximate cost, \$5.

Prerequisite: Clothing 5, 15, 33, 35, and Fine Arts 1.

**\* Clothing e45a-45b—Section IX–X of Clothing 45.** Credit IV. 3 points for the year. Fee \$12 each Session. Not charged at \$6 per point  
 9–11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 27

**\* Clothing e65—Embroidery.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24 each Session. Not charged at \$6 per point. Miss WHITE  
 2:10–5 p. m., Monday and Friday, Spring Session  
 Room 301 H. A.

Requires fifteen students

This course includes practice in various kinds of embroidery—French embroidery for underwear, lingerie waists, and household linen; dress embroideries in white and colors and various specialized embroideries. Students provide certain materials subject to the approval of the instructor.

**\* Clothing e27—Millinery, elementary.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point. Mrs. TOBEY  
 Section III—9–11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as  
 Section IV—Spring Session  
 Room 302 H. A.

Each section requires fifteen students

This course includes practice in the making and covering of frames and in the preparation of trimmings, such as wiring bows, shirrings, puffings, milliners' folds. Students provide material subject to the approval of the instructor.

**\* Clothing e55L—Dressmaking, intermediate.** For teachers. Laboratory work. Credit IV. 3 points. Special fee \$24. Not charged at \$6 per point  
 Section V—9–11:50 a. m., Monday, Tuesday, Wednesday, Thursday, Friday, second half of Winter Session. Repeated as  
 Section VI—second half of Spring Session  
 Section IX–X—Saturday, throughout the year. Begins September 27. (Register for e55a-55b below)

Limited sections. Requires ten students

This course gives practical experience in shop work. Ready-to-wear garments are made and orders are executed under the direction of an experienced shop worker.

Prerequisites: Clothing 5, 15, 35.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

**\* Clothing e55a-55b**—Section IX-X of Clothing 55. Credit IV. 3 points for the year. Fee \$12 each Session

9-11:50 a. m., Saturday, Winter and Spring Session. Begins September 27

**Textiles e1**—**Textile economics and design.** For teachers. Lecture work. Credit IV. 1 point supplementary to other textile or clothing work. Fee \$6. Miss EVANS

Section II—12-12:50 p. m., Saturday, Spring Session, Room 301 H. A. Begins February 7

Requires fifteen students

In this course a study of textiles is made from the standpoint of economics, texture, and color.

### *Courses for Home Workers*

**Clothing e1L**—**Sewing, elementary.** Laboratory work. Fifteen three-hour lessons. No credit. Fee \$15. Miss EVANS

9-11:50 a. m., Wednesday, Winter Session. Begins October 8

Room 301 H. A.

Limited sections. Each section requires fifteen students

This course includes practice in hand and machine sewing and in the cutting, fitting, and making of undergarments. Students provide required materials.

**Clothing e31L**—**Dressmaking.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$15. Miss EVANS

Section I—10-11:50 a. m., Monday and Friday, Winter Session. Begins October 6. Repeated as

Section II—Spring Session. Begins February 9

Section III—2:10-4 p. m., Wednesday and Friday, Winter Session. Begins October 6. Repeated as

Section IV—Spring Session. Begins February 9

Room 311 H. A.

Limited sections. Each section requires fifteen students

This course includes the cutting, fitting, and making from patterns of shirtwaists and unlined dresses in cotton, silk, and wool. Students provide materials.

**Clothing e71L**—**Dressmaking, advanced.** Fifteen three-hour lessons. No credit. Fee \$15. Miss EVANS

Section II—9-11:50 a. m., Wednesday, Spring Session. Begins February 11

Room 301 H. A.

The section requires fifteen students

Students provide required materials.

**Clothing e7L**—**Millinery, elementary.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$15. Mrs. NELSON

Section I—10-11:50 a. m., Tuesday and Thursday, Winter Session. Begins October 7. Repeated as

Section II—Spring Session. Begins February 10

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.



Section III—2:10-4 p. m., Tuesday and Thursday, Winter Session. Begins October 7. Repeated as

Section IV—Spring Session. Begins February 10

Room 311 H. A.

Each section requires fifteen students

This course includes the making of frames in wire and willow; the covering of hats in silk, velvet, lace, and straw; and demonstrations in trimming. Students provide materials.

Other and more advanced courses in clothing, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor FALES

### *Household Administration*

\* **Administration e1L—Housewifery and household management.** Discussions, observation, and practical work. Credit IV. 2 points. Fee \$12. Miss BALDERSTON and assistant

Section I—9-10:50 a. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

Section III—2:10-4 p. m., Monday and Wednesday, Winter Session. Repeated as

Section IV—Spring Session

Room 53 H. A.

Limited sections

This course treats of the kinds of work needed in various parts of the household and the systematic planning of the daily routine in care of rooms and their equipment. Special topics are: tools and materials; labor-saving appliances; care, cleaning, and repair; household efficiency; schedules of work; household service.

\* **Administration e5—Home-making adjustments in social work.** 2 points. Fee \$12. Miss WINSLOW

3:10-5 p. m., Wednesday, Winter and Spring Sessions

Requires fifteen students

This course discusses certain of the home-making problems of small-income families, and the methods of helping such families to live according to better standards with reference to food, clothing, housing, housekeeping, and child care. It also discusses methods of increasing household thrift by budget planning and budget supervision.

\* **Administration e5x—Field work in family visiting.** 1 point. Supplementary to Administration 5. Fee \$6. Miss WINSLOW

Hours to be arranged

This course provides opportunity for supervised field work in connection with recognized social agencies, for the purpose of acquainting students with actual home-making problems and methods of helping families to meet these problems more successfully.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

**\* Administration e11L—Domestic laundering.** Discussions, demonstrations, and laboratory work. Credit IV. 2 points. Fee \$12. Miss BALDERSTON and assistant

Section I—9-11:50 a. m., Tuesday, Winter Session. Repeated as

Section II—Spring Session, if there is a registration of fifteen students

Rooms 53 and 57 H. A.

Limited sections

Intended for the teacher or for the person concerned with household management. It presents the principles and processes included in laundry work; space, equipment, and materials required for work in the home; machinery for domestic work, its cost, care, and uses; the processes of laundering; care of fine work, embroidery, laces; system in the domestic laundry; the household and the commercial laundry.

Recommended preparatory: Chemistry 1 or 3.

**\* Administration e21—Marketing.** Credit IV. 2 points. Fee \$12. Miss LA GANKE

Section III—10-11:50 a. m., Wednesday, Winter Session. Repeated as

Section IV—Spring Session

Each section requires fifteen students

This course deals with the problems of purchasing household and food supplies. It discusses methods of buying, quality, quantity, and tests; ordinary food supplies, and discusses the sources of supply, season, and prices.

**House management.** A special circular may be obtained from the Secretary of Teachers College

Other and more advanced courses in administration, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor GUNTHER

**Household economics e79—Household economic science.** Credit IV. 2 points. Fee \$12

Section I—4:10-5 p. m., Monday and Wednesday, Winter Session. Repeated as

Section II—Spring Session

Each section requires fifteen students

Deals with the organization and control of family and personal life through the economic relations of the household. The family income and its expenditure, including the following topics: the income, its source, and the equivalent of income in productive labor within the household; family expenditures and their regulation; the budget system; the items of the budget as measures of standards of living; necessities for efficient living—shelter, food, clothing, and personal life; house ownership *versus* rental; house maintenance, furnishings, and equipment; operating expenses and the cost of cleanness; the cost of food and clothing; the personal life as reflected in personal expenditure; thrift; methods of saving, as savings banks, investments, and insurance—life, accident, and fire.

**Household economics e81—Household accounts.** Credit IV. 2 points  
Spring Session. Professor ANDREWS

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

3:10-4 p. m., Tuesday and Thursday. Fee \$12

Requires fifteen students

Gives special attention to household accounts, for the teacher, house manager, and consultant.

## INDUSTRIAL ARTS \*

### *Art Industries*

For courses in woodcarving, hammered metal, silversmithing, jewelry, and color printing, see under Fine Arts

### *Industrial Arts Education*

**\* Industrial Arts e143-144—Industrial arts for the elementary grades.**

Credit IV. 2 points each Session. Fee \$12 each Session. Miss PATRICK

Section I—2:10-4 p. m., Monday and Wednesday

Section II—4:10-6 p. m., Tuesday and Thursday

Section III—9-12:20 a. m., Saturday

Each section requires fifteen students

This course deals with those typical forms of industrial arts work which are practical in the first six grades of the elementary school.

It aims to secure a method of instruction that will emphasize thinking about concrete objects with relation to industrial uses; the projects include simpler phases of weaving, sewing, clay-working, cookery, wood-, metal-, and paper-working. The application of design to these projects is cared for. The relations of nature-study, geography, history, art, literature, and arithmetic to the course are considered.

**\* Industrial Arts e145-146—Teaching industrial arts in elementary schools.** Credit IV. 2 points each Session. Professor BONSER and Mrs. MOSSMAN

3:10-4 p. m., Monday and Wednesday. Fee \$12 each Session

Requires fifteen students

For full description, see *Announcement of School of Practical Arts*

### *Courses in Shopwork*

Students who take shopwork in Industrial Arts will be required to purchase from the Bursar of Teachers College a 'laboratory ticket', price \$2, the coupons of which are to be used in paying for special materials required for individual use and for damage to or loss of apparatus in any shops, laboratories, or studios of Teachers College. Unused coupons are redeemable at the end of any Session.

**\* Industrial Arts e10—Use and care of woods in the home.** Lectures and practical work. 1 point. Mr. BOWMAN and assistant

9-11:50 a. m., Wednesday, Spring Session

A course for students of household administration and interior decoration. Kinds of wood for house trim and furniture. Finishes and their care.

**\* Industrial Arts e47-48—Industrial arts for junior and regular high schools.** Lectures, shopwork, and excursions. Credit IV. 3 points each Session. Special fee \$24 each Session. Not charged at \$6 per point. Mr. BOWMAN

2:10-5 p. m., Tuesday and Thursday, Room 29 Macy

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.



This course includes projects and problems appropriate for the upper grades and high school or the junior high school. The room is specially equipped as a demonstration industrial arts shop for working out sample demonstration units of work suitable for industrial arts for pupils of the seventh, eighth, and ninth years.

The course covers the selection of elements from industrial activities, visitations to a series of industrial plants, the relation of industrial arts work to modern large scale machine production, and the information side of the industrial arts work as it centers around vocational guidance. Adaptation to work in general science will receive attention.

**\* Industrial Arts e47a-48a—Industrial arts for junior and regular high schools, briefer course.** 2 points each Session. Mr. BOWMAN  
9 a. m.—12:20 p. m., Saturday, Room 29 Macy

**\* Industrial Arts e57—Automobile mechanics.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$32. Not charged at \$6 per point. Mr. GOOD and assistants

Section I—3:10-6 p. m., Tuesday and Thursday, Winter Session, Room 408 T. C.

Section II—3:10-6 p. m., Tuesday and Thursday, Spring Session

Each section requires at least fifteen students

A series of mechanical and electrical problems dealing with the construction, operation, adjustment, and care of the automobile. The work will include assembling and disassembling parts of the mechanism; locating and correcting troubles in connection with a study of the essential principles of gas-engines, carbureters, ignition systems, starting and lighting systems, cooling systems, clutches, gears, the differential, care of tires, lubrication, and fuels. This course does not include driving lessons on the road.

For students of vocational education this course will illustrate the use of the automobile for instruction in high schools and industrial schools.

The lecture-demonstration (3:10-4) may be taken without the laboratory work by students who are permitted by the instructor to register for Industrial Arts 57a, 2 points. This course may not be substituted for any required course in physics.

**\* P. A. Mathematics e31-32—Industrial mathematics.** Credit IV. 2 points each Session. Mr. BRECKENRIDGE  
11-12:50 p. m., Saturday. Fee \$12 each Session. See page 106

### *Textile Industries*

The following courses of twelve lessons each may be given on certain evenings 8-10 p. m., beginning in October, 1919: (a) woolens, (b) silks, ribbons, and pile fabrics, (c) cottons and cotton mixtures. Special circulars may be obtained in September from the office of the Secretary of Teachers College

Other and more advanced courses in Industrial arts, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to the instructor

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

## MUSIC AND SPEECH\*

*General Art of Music*

**P. A. Music e21-22—Epochs in the development of music.** Lectures with musical illustrations and recitals. 2 points each Session. Fee \$12 each Session. Professor FARNSWORTH AND Miss WIETHAN

4:10-5:30 p. m., Thursday, Room 502 Horace Mann School

A survey of the history of music with reference to those events that affect our present musical interests giving (a) material and method for the teaching of history and appreciation of music in schools; (b) opportunity for an acquaintance with the art that shall serve as a basis for greater musical enjoyment.

**P. A. Music e32—Sound as related to music.** Lectures, excursions, and laboratory work. Credit IV. 2 points. Fee \$12. Mr. GOOD, Mr. KRAFT, Professors WOOD and WHITLEY

11-11:50 a. m., Monday, Room 408 T. C., and 11-11:50 a. m., Friday, Room 118 T. C., Spring Session

The Monday period is devoted to a study of the physical basis of sound production and transmission and the application of physical principles to typical musical instruments. It includes laboratory demonstrations.

The Friday period includes lectures on the physiology and psychology of tone production and excursions to instrument factories.

**\* P. A. Music e41-42—Musical literature.** Credit IV. 2 points each Session. Professor FARNSWORTH and Miss WIETHAN

3:10-4 p. m., Tuesday and Thursday, Room 502 Horace Mann School. Fee \$12 each Session

The aim of this course is to aid in forming a standard of taste in music by utilizing the unusual musical opportunities that the city affords. The work consists of musical illustrations, with discussions and practice in reporting.

**\* P. A. Music e25-26—Sight singing.** Credit IV. 2 points each Session. Mr. KRAFT

3:10-4 p. m., Monday, Wednesday, and Friday, Room 118 T. C. Fee \$12 each Session

This course develops speed in determining what the notation means and skill in its vocal production. The aim of the work is to provide the general student with the fundamental work necessary for all forms of musical activity and to serve as an introductory course to professional students who are unable to do the work required in Music 13-14—Tone thinking.

**\* P. A. Music e13-14—Tone thinking.** Music dictation and reading, including harmonic and melodic material. Credit IV. 2 points each Session. Mr. KRAFT

4:10-5 p. m., Monday, Wednesday, and Friday, Room 118 T. C. Fee \$12 each Session

This course is basic for all singers, players, and music teachers. It gives practice in describing, in writing and orally, what is heard in music, and includes singing at sight.

Prerequisite: Either Music 25-26 or the ability to write from hearing a simple phrase of music.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p.m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

**\* P. A. Music e33-34—Introductory harmony.** Credit I, IV. 2 points each Session. Mr. KRAFT  
2:10-3 p. m., Monday, Wednesday, and Friday, Room 118 T. C. Fee \$12 each Session

The aim of this course is: first, to lead the student to observe the structure of hymn-tunes, chorals, and simple compositions, with reference to the melodic movement of parts and to the character and distribution of chords; second, to give practice in melodic invention and chord combinations expressed in simple constructive work. This work can be adapted to high schools.

**\* P. A. Music e65-66—Chorus singing and conducting.** Credit IV. 2 points each Session. Mr. KRAFT  
11-11:50 a. m., Tuesday, Wednesday, and Thursday, Room 118 T. C. Fee \$12 each Session

(a) Discussion of the means employed by the conductor in the interpretation of a composition; preparation of typical programs, giving reasons for choice and order of compositions; review of material suitable for school choruses; the organization of instrumental music in schools and the arrangements of parts for best effect under given conditions.

(b) Practice in chorus singing and conducting by members of the class.

### *Technical Music Courses*

**\* P. A. Music e15-16—Voice: first year.** Individual work in groups limited to four. Credit IV. 2 points each Session. Special fee for Sections II and III, \$30 for each Session. Not charged at \$6 per point

Section II—Room 605 H. A. Miss DASCHBACH

Section III—Room 605 H. A. Mr. JOLLIFFE

Hours to be arranged

**\* P. A. Music e35-36, e55-56, e75-76—Advanced courses in voice.** Hours to be arranged. Given in groups; under same conditions as to credit, hours, and fees as for the same instructors in Music e15-16. Consult Professor FARNSWORTH

**\* P. A. Music e27-28—Piano: first year.** Credit IV. 2 points each Session. Requires at least six hours' practice a week. Special fee \$30 for each Session. Not charged at \$6 per point. Mrs. ZERBE-COWL

(a) Individual work in groups limited to four. Once a week

The work presents the technique of playing, sight-reading, accompanying and drill in methods for concentration and practice, requiring, as a result, the ability to play at least a dozen pieces from memory.

(b) Class lessons: once a week, combining all groups

4:10-5 p. m., Tuesday, and other hours to be arranged with the instructor, Mrs. ZERBE-COWL. Room 118 T. C.

The work includes ear training, interpretation, with examples by both students and instructor. Analyses and estimates are made of a large number of pieces.

**\* P. A. Music e37-38, e57-58, e67-68—Advanced courses in piano.** Hours to be arranged. Given in groups; under same conditions as to credit, hours, and fees as for the same instructors in Music 17-18. Consult Professor FARNSWORTH

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.



**Piano practice**—Fee for use of pianos by students registered for eight or more points in a Session is \$4 per Session for six hours or less per week. Arrange hours at the office of Practical Arts on September 30

**\* P. A. Music e19-20—Organ.** Credit IV. 2 points each Session. Special fee, \$35 for each Session. Not charged at \$6 per point. Mr. KRAFT

Individual work in groups. Requires three students to form a group; limited to four. Work and hours to be arranged. Consult instructor

Manuals, pedals, technical studies, Bach's Eight Short Preludes and Fugues. Albrecht-berger's Trios.

Prerequisite: Elementary piano-playing.

**\* P. A. Music e29-30—Organ.** Credit IV. 2 points each Session. Special fee, \$50 for each Session. Not charged at \$6 per point. Mr. LAMOND

**\* P. A. Music e39-40—Violin.** Credit IV. 2 points each Session. Special fee, \$40 for each Session. Not charged at \$6 per point. Mr. STOWELL

Hours to be arranged. Room 603 H. A. Individual work in groups limited to four. Requires three students to form a group

The work in this course includes a good position for scales in all keys, bowing, exercises, studies, solos, and special work of the development of good tone, together with ensemble and sight-reading classes.

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Other courses in music for teachers, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor FARNSWORTH

### *Speech*

**\* Speech e1A—Voice and diction, introductory.** Lectures, class exercises, and individual practice. Credit IV. 2 points. Fee \$12. Professor LATHAM and assistant

9-10:50 a. m., Saturday, Winter Session

Requires fifteen students

(1) Breathing, carrying tone, distinct utterance; correction of individual faults—nasality, throatiness, etc.; a practical study of phonetics leading to standard pronunciation of English and to a working knowledge of the facts of speech necessary for teaching speech sounds.

(2) A study of the elements of vocal expression—pitch, inflection, time, etc.; practice in speaking with notes and without notes; effective use of the voice in teaching and lecturing.

**\* Speech e3-4—Story-telling and reading, introductory.** Lectures, practice, criticism, and recitals. Credit IV. 2 points each Session. Fee \$12 each Session. Mrs. HALLOCK

4:10-5 p. m., Tuesday and Thursday

Requires fifteen students

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

This is an elementary course in story-telling and reading as fine arts. It is planned to meet the needs of students intending to use these arts in the home, the school, the playground, and social clubs.

**\* Speech e3A—Brief course.** Similar to Speech e3-e4. 2 points. Fee \$12  
11 a. m.-12:50 p. m., Saturday, Spring Session  
Requires fifteen students

**\* Speech e51-52—Dramatic reading and speaking.** Lectures, practice, criticism, and recitals. Credit IV. 2 points each Session. Fee \$12 each Session.  
Professor LATHAM and assistant  
3:10, Wednesday and Friday

This course is open to students who have had Speech 1-2 and 3-4, or similar courses.

In the first half of the course, the principles of vocal expression are studied; practice in reading plays is required; opportunity is given for taking part in the Teachers College Festival plays. In the second half of the course, scenes are acted in the class, and opportunity is given for program recitals of chosen types of literature and of original compositions.

**\* Speech e57—Speech correction.** Credit IV. 2 points. Fee \$12. Mrs.

SCRIPTURE

11 a. m.-12:50 p. m., Saturday, Winter Session

This is primarily a course for teachers who must undertake the correction of speech defects in schools. The defects to be studied will include stuttering, lisping, cluttering, and negligent articulation. There will be lectures upon the causes of these defects and upon the theories advanced by prominent authorities concerning them. The study required will be upon the anatomy of the vocal organs, phonetics, diagnosis of speech defects, tongue and mouth gymnastics, and corrective exercises.

Patients from the Vanderbilt Clinic will be in attendance at all lectures where exercises are to be explained, and every detail will be fully illustrated by them.

**Speech e182—Dramatization.** Investigation and practical work. 2 points.  
Fee \$12. Professor LATHAM and others  
9-10:50 a. m., Saturday, Spring Session  
Requires fifteen students

This course is given to meet the rapidly increasing demand for guidance in the selection and use of material for original dramatic exercises in schools and social centers. Simple plays will be made and acted. The work of the class will be done in small groups interested in similar problems, and the special aims of individual students will be considered as far as that can be done without slighting attention to basic principles of dramatic expression.

**\* Practical Arts e181—School and community festivals.** Lectures, discussions, and practical work in planning festivals and organizing committees. Credit IV. 2 points. Fee \$12 Professor LATHAM, assisted by Professors WOOD, FARNSWORTH, DOW, ABBOTT, and VAN ARSDALE, and Miss COLBY, Miss WILMOT, Miss NORTHRUP, Miss DILLER, and Miss BEAUMONT  
4:10 p. m., Wednesday and Friday, Winter Session

The lectures take up the problems of festival-making in schools and communities and show possible ways of solving them to further educational and social ends. Especial attention is given to available sources of material for the art forms involved, and original effort is fostered.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

The student's reading is limited to his immediate needs and interests, and does not cover the subject historically, except for those desiring to acquaint themselves with some chosen period or people. Opportunity is given for practical work in the Teachers College Festival.

### NURSING AND HEALTH \*

**\* Nursing e3—Physical care of infants and small children.** Lectures, demonstrations, and readings. Credit IV. 2 points. Fee \$12. Miss HAWKINSON  
 Section I—3:10-5 p. m., Monday, Winter Session. Repeated as  
 Section II—Spring Session  
 Section III—10-11:50 a. m., Tuesday, Winter Session. Repeated as  
 Section IV—Spring Session  
 Sections II and IV require fifteen students

Presents the theory and practice of the care of infants and small children in a series of lectures and demonstrations. The following topics will be treated: the basis in physiological knowledge for the rational care of the child, the physical care of the infant and child, presenting in turn such topics as the daily régime of the infant, food, sleep, bathing, clothing; the child, from the third to the sixth year, nursery, clothing, food.

**\* Nursing e5—Home nursing.** Lectures, demonstrations, and laboratory practice. Credit IV. 2 points. Fee \$12. Miss HAWKINSON  
 Section I—2:10-4 p. m., Thursday, Winter Session. Repeated as  
 Section II—Spring Session  
 Section III—2:10-4 p. m., Friday, Winter Session. Repeated as  
 Section IV—Spring Session  
 Each section requires fifteen students

This course deals with the prevention and care of illness in the home. It discusses such topics as proper surroundings for the sick, the early recognition of the common symptoms of disease, food for the sick, prevention and care of common ailments, such as colds, sore throats, etc., care of sick children and the aged, including simple nursing procedures and first-aid treatment for common household emergencies.

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Other and more advanced courses in nursing and health, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor NUTTING

### PHYSICAL EDUCATION \*

The following extension courses are given in the Thompson Building of Teachers College, October 1, 1919, to May 15, 1920. First half-year (Winter Session) begins September 24. Second half-year (Spring Session) begins February 4

Lockers are available for women only. A deposit of twenty-five cents must be made for each locker key. This must be redeemed and gymnasium suits removed before June 6

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.



The swimming-pool is reserved for women and children  
 Gymnasium shoes must be soft-soled and without heels  
 Information concerning gymnasium and swimming suits may be obtained from  
 the Secretary of the Department of Physical Education

**Special Lessons**—A number of special series of lessons for women and children in gymnastics, folk and natural dancing, swimming, and corrective gymnastics will be given from September, 1919, to May, 1920, in the Thompson Building of Teachers College by the School of Practical Arts in cooperation with the University Institute of Arts and Sciences. A special circular may be obtained in September from the Secretary of Teachers College

\* **Physical Training eA1-A2**—For women. Credit IV. 1 point each Session. Fee \$6 each Session. Miss YUNCK and assistants  
 Section IV—2:10 p. m., Monday and Wednesday. Folk dancing

\* **Physical Training eB1-B2**—For women. Credit IV. 1 point each Session. Fee \$6 each Session. Miss YUNCK and assistants  
 Section I—2:10 p. m., Tuesday and Thursday. Folk dancing  
 Section III—4:10 p. m., Monday and Wednesday. General gymnastics  
 Section IV—4:10 p. m., Tuesday and Thursday. Athletics

\* **Physical Training eC1-C2**—For women. Credit IV. 1 point each Session. Fee \$6 each Session. Miss YUNCK and assistants  
 Section V—4:10 p. m., Tuesday and Thursday, Room 255 Thompson  
 Section VI—5:10 p. m., Monday and Wednesday, Room 255 Thompson  
 Section VIII—Outdoor athletics and hikes. Hours for groups to be arranged, especially on Saturdays or other days

Sections V and VI are arranged with reference to the needs of mature students who wish the simpler forms of exercise. These include gymnastic exercises, games, swimming, and elementary dancing. The outdoor work of Section VIII will be under the direction of group leaders who will emphasize the principles of outdoor exercise for health.

\* **Physical Training eD1-D2**—For women. Credit IV. 1 point each Session. Fee \$6 each Session. Miss YUNCK and assistants  
 Section VII—3:10 p. m., Monday and Wednesday, Room 255 Thompson

Section VII is arranged to give practice in dancing to Juniors and Seniors who have already had training equivalent to that in courses A, B, C.

\* **Physical Education e54**—Games, folk dancing, and corrective gymnastics. Credit IV. 2 points. Fee \$12  
 10 a. m., Monday, Wednesday, and Friday, Spring Session  
 Requires fifteen students

This condensed course is designed for school nurses and others who are interested in helping to introduce simple and wholesome forms of recreation into schools and communities. Certain physical defects common among school children will also be discussed and corrective exercises demonstrated. The work will include theory and practice in dramatic games, games of skill, simple folk dancing, and corrective gymnastics.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor must be consulted before registration, and written permission obtained.

- \* Physical Education e154—Recreation work in social centers.** Credit IV. 2 points. Fee \$12. Miss COLBY and assistant  
10 a. m., Monday, Wednesday, and Friday, Spring Session  
Requires fifteen students

This condensed course is planned for social and religious workers who expect to direct recreation activities in social centers. It will consist of one hour lecture and two of practical work. The lecture will take up the theory of selection of suitable material and discussion of methods of handling various groups.

- \* Physical Education e77-78—The dramatic game.** Theory and practice. Credit IV. 1 point each Session. Fee \$6. Miss COLBY  
5:10 p. m., Tuesday and Thursday, Room 253 Thompson

This course takes up fundamental play rhythms and music; interpretation through characterization and development of plot; the study of dramatic and singing games, showing their historical and racial significance; the development of simple folk dances from singing games; trade dances; Indian dances; pantomimes and ceremonies. The aim is to show the relation of this material to the psychological development of the child.

The course includes assigned reading, note-books, and original constructive work. The material is suitable for use in the first six grades.

- \* Physical Education e183-184—Educational hygiene.** Lectures, collateral reading, demonstration, and reports. Credit IV. 2 points each Session. Fee \$12 each Session. Professor WOOD

2:10 p. m., Monday and Wednesday, Room 164 Thompson

Education 183 takes up health education with special reference to the needs and work of teachers.

Education 184 deals with various phases of school hygiene.

For full description, see *Announcement of School of Practical Arts*, § 104

- \* Physical Education e185-186—Play and playgrounds, and community centers.** Lectures, required reading, and observation. Credit IV. 2 points each Session. Fee \$12 each Session. Mr. GIBNEY

5:10 p. m., Tuesday and Thursday, Room 164 Thompson

This course is intended for men and women who are preparing for work in recreation systems and playgrounds. It aims to enrich the content of playground and community center work, to encourage the formation of standards to develop a capacity for leadership, and to equip students for professional careers in the field covered.

- \* Physical Education e187-188—Hygiene of childhood and adolescence.** Lectures, reference reading, discussions, and reports. Credit IV. 2 points each Session. Fee \$12 each Session. Professor WOOD

11 a. m., Saturday, lecture; 12 m., Saturday, conference; Room 164 Thompson

Education 187 deals with the following topics: The principle of projected consciousness as applied in the nurture and education of children; brief review of organic evolution, heredity and prenatal influence; consideration of eugenics; application of biologic principles in care of infancy and childhood; relation of physical welfare to other values in the life of the child.

Education 188 deals with the following topics: Significance and value of the lengthened period of immaturity in the human species; adolescent development with normal and abnormal

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p.m. on September 23 or February 3. The instructor or the Secretary of the Department of Physical Education must be consulted before registration, and written permission obtained.

mal characteristics; sex development with the direct and indirect influences upon the individual at various stages of growth; mental and emotional hygiene; education of the instincts and emotions; education for parenthood involving sex-hygiene and sex-education, with other factors.

**\* Physical Education e197-198—Clubcraft.** Credit IV. 1 point each Session.  
Fee \$6 each Session. Mr. C. F. SMITH  
11 a. m., Monday

Open to students of other departments. This course is intended to give the practical training required by club leaders and supervisors. A study of the principles, aims, and programs of the better established club movements and organizations will be made. Actual practical work will be done and opportunity provided for observation and study of Horace Mann clubs.

**Hygiene**—For courses in hygiene related to physical education, see p. 106

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Other courses in physical education, with numbers below 100, described in the *Announcement of the School of Practical Arts*, may be made available for specially qualified non-matriculated students, who bring to the Director of the School of Practical Arts the written approval of Professor WOOD

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 2 p. m. on September 23 or February 3. The instructor or the Secretary of the Department of Physical Education must be consulted before registration, and written permission obtained.



## ACADEMIC CALENDAR

1919-1920

1919

(For full academic calendar, apply to the Secretary of Columbia University)

July 7—Monday. Twentieth Summer Session begins.

Aug. 15—Friday. Twentieth Summer Session ends.

Sept. 15—Monday. Entrance and deficiency examinations begin.

Sept. 17—Wednesday. Registration for the Winter Session in Extension Teaching (including the payment of fees) begins.

Sept. 24—Wednesday. Winter Session, 166th year of Columbia University, begins.

Sept. 25—Thursday. Classes in Extension Teaching begin.

Nov. 4—Tuesday. Election Day, holiday.

Nov. 26—Wednesday. Annual Thanksgiving Service in St. Paul's Chapel.

Nov. 27—Thursday

to

Nov. 29—Saturday, inclusive, Thanksgiving holidays.

Dec. 7—Sunday. Annual Commemoration Service in St. Paul's Chapel.

Dec. 22—Monday

to

1920

Jan. 3—Saturday, inclusive, Christmas holidays.

Jan. 15—Thursday. Mid-year examinations begin.

Jan. 26—Monday

to

Jan. 31—Saturday, inclusive, mid-year examinations in Extension Teaching.

Jan. 31—Saturday. Registration for the Spring Session in Extension Teaching (including the payment of fees) begins.

Feb. 3—Tuesday. Winter Session ends.

Feb. 4—Wednesday. Spring Session begins. University Service in St. Paul's Chapel. Classes in Extension Teaching begin.

Feb. 12—Thursday. Alumni Day.

Feb. 23—Monday. Washington's Birthday, holiday.

April 1—Thursday

to

April 5—Monday, inclusive, Easter holidays.

Apr. 15—Thursday. Last day for filing applications for the professional certificate in secretarial studies and in the evening courses in business.

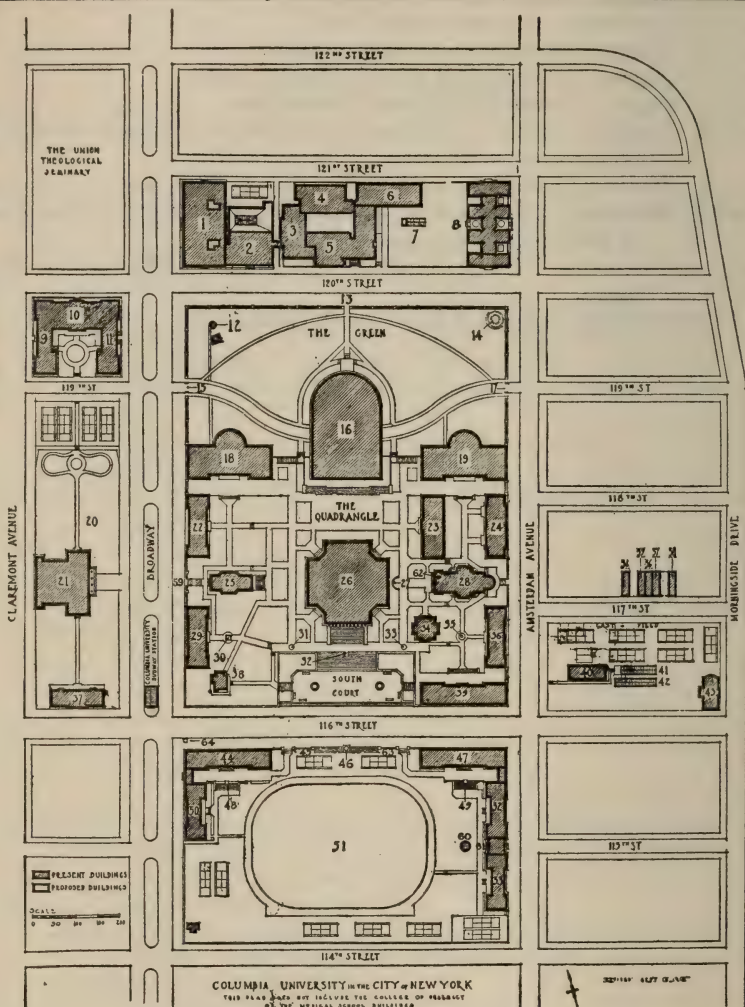
May 24—Monday.

to

May 29—Saturday, inclusive, final examinations in Extension Teaching.

- May 30—Sunday. Baccalaureate Service.  
May 31—Monday. Memorial Day, holiday. Class Day.  
June 2—Wednesday. Commencement Day.  
June 21—Monday. Entrance examinations begin.  
July 6—Tuesday. Twenty-first Summer Session begins.  
Aug. 13—Friday. Twenty-first Summer Session ends.  
Sept. 6—Monday. Last day for filing applications for entrance examinations and for advanced standing.  
Sept. 13—Monday. Entrance and deficiency examinations begin.  
Sept. 15—Wednesday. Registration for the Winter Session in Extension Teaching (including the payment of fees) begins.  
Sept. 22—Wednesday. Winter Session, 167th year of Columbia University, begins.  
Sept. 23—Thursday. Classes in Extension Teaching begin.

INFORMATION  
RD TO THE BUILDINGS AND GRO  
COLUMBIA UNIVERSITY



### Teachers College

1. Horace Mann School
2. Thompson Memorial Bldg.
3. Milbank Memorial Chapel
4. Macy
5. Main Building
6. Household Arts
7. Peabody Greenhouse
8. Whittier
9. Barnard College
10. Fiske
11. Milbank
12. Brinckerhoff
13. Milbank Quadrangle
14. Students' Hall
15. Brooks Hall
16. Columbia University
17. Wilde Observatory
18. Class of 1882 Gates
19. Statue of the great God Pan
20. Mapes Gates
21. University
22. Class of 1888 Gate

18. Havemeyer
19. Schermerhorn
22. Engineering
23. Avery
24. Fayerweather
25. Earl
26. Library
27. Class of 1886 Exedra
28. St. Paul's Chapel
29. Mines
30. Meunier's Hammerman,  
1889 Mines Class Gift
31. Lafayette Post Flag Staff
32. Statue of Alma Mater
33. Class of 1881 Flag Staff
34. East
35. Class of 1887 Well Head
36. Philosophy
37. Faculty Club
39. Kent
40. Crocker Research
41. Botany Greenhouse
42. Agriculture Greenhouse

43. President's House
44. Journalism
45. Classes of 1884 and 1899  
    Tablet
46. Class of 1885 Sun Dial
47. Hamilton
48. Jefferson Statue
49. Hamilton Statue
50. Furnald
51. South Field
52. Hartley
53. Livingston
54. Columbia House
55. Dean Hawley
56. Chaplain Knox
57. Maison Francaise
58. Carnegie Endowment
59. Class of 1891 Gates
60. Van Amringe Memorial
61. 1906 Clock
62. Class of 1903 Chapel Bell
63. Rives Memorial Steps
64. Class of 1890 Pylon























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# Columbia University Bulletin of Information

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## EXTENSION TEACHING ANNOUNCEMENT

AFTERNOON, EVENING, AND SATURDAY CLASSES  
MORNINGSIDE HEIGHTS

1920-1921

PUBLISHED BY  
Columbia University  
in the City of New York  
MORNINGSIDE HEIGHTS  
NEW YORK CITY



## **Columbia University Bulletin of Information**

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1. Annual Reports of the President and Treasurer to the Trustees.

2. The Catalogue of the University, price 25 cents, and the Announcements of the several Colleges and Schools, and of certain Divisions, issued in the Spring, and relating to the work of the next year. These are made as accurate as possible, but the right is reserved to make changes in detail as circumstances require. The current number of any of these Announcements will be sent without charge upon application to the Secretary of the University.

A.P.—55,000—1920.

**The office of Extension Teaching is Room 301 University Hall  
For office hours, see page 5**

**A special circular will be issued  
for courses added after June 1**



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A. B. KOUKOL . . . . .	<i>Czecho-Slovak</i>
Instructor, Extension Teaching, Columbia	
WILLIAM JACOB KRAFT, B.MUS. . . . .	<i>Music</i>
Associate, Columbia	
GEORGE PHILIP KRAPP, PH.D. . . . .	<i>English</i>
Professor, Columbia	
WILLIAM J. KREFELD, C.E. . . . .	<i>Civil Engineering</i>
Instructor, Columbia	
GEORGE KRIEHN, PH.D. . . . .	<i>Fine Arts</i>
Lecturer, Extension Teaching, Columbia	
CHARLES I. LAMBERT, M.D. . . . .	<i>Psychology</i>
Instructor, Extension Teaching, Columbia	
KENNETH W. LAMSON, PH.D. . . . .	<i>Mathematics</i>
Instructor, Columbia	
GUSTAV E. LANDT, B.S. . . . .	<i>Chemistry</i>
Assistant, Columbia	

WILLIAM PAUL LANGREICH . . . . .	<i>Advertising Display</i>
Instructor, Extension Teaching, Columbia	
AZUBAH JULIA LATHAM, A.B. . . . .	<i>Speech</i>
Assistant professor, Columbia	
MINOR W. LATHAM, A.M. . . . .	<i>English</i>
Instructor, Columbia	
JOSEPH LAUBER, MURAL PAINTER. . . . .	<i>Architecture</i>
Instructor, Columbia	
ALMA DE L. LEDUC, PH.D. . . . .	<i>French</i>
Instructor, Columbia	
EDWARD M. LEHNERTS, A.M. . . . .	<i>Geography and Geology</i>
Instructor, Teachers College	
ROBERT D. LEIGH, A.M. . . . .	<i>Government</i>
Assistant professor, Reed; lecturer, Columbia	
H. F. LEMCKE . . . . .	<i>Drawing and Advertising</i>
Manager, Lantern Slide Coloring Branch, Inter-Church World Movement; Instructor, Extension Teaching, Columbia	
WILLIAM LILLY, LL.B. . . . .	<i>Business Law</i>
Instructor, Extension Teaching, Columbia	
SHIRLEY V. LONG, A.M. . . . .	<i>English</i>
Instructor, Extension Teaching and Summer Session, Columbia	
R. A. LOUGHNEY . . . . .	<i>Advertising</i>
Instructor, Extension Teaching, Columbia	
ROBERT H. LOWIE, PH.D. . . . .	<i>Anthropology</i>
Associate Curator, Department of Anthropology, American Museum of Natural History	
HASTINGS LYON, LL.B. . . . .	<i>Corporation Finance</i>
Assistant professor, Columbia	
JOHN H. H. LYON, Litt.D., PH.D. . . . .	<i>English</i>
Assistant professor, Columbia	
ZILLAH K. MACDONALD . . . . .	<i>Stenography and Typewriting</i>
Instructor, Extension Teaching, Columbia	
DONALD S. MACKAY, A.B., B.D. . . . .	<i>Philosophy</i>
Instructor, Extension Teaching; assistant, Columbia	
GRACE MACLEOD, A.M. . . . .	<i>Household Arts</i>
Instructor, Teachers College	
ARTHUR WHITTIER MACMAHON, A.M. . . . .	<i>Government</i>
Instructor, Columbia	
VIRGIL S. MALLORY, A.B. . . . .	<i>Mathematics</i>
Instructor, Extension Teaching, Columbia	
CLARENCE AUGUSTUS MANNING, PH.D. . . . .	<i>Russian</i>
Lecturer, Columbia	
HENRI G. MARCEAU . . . . .	<i>Architecture</i>
Assistant instructor, Extension Teaching, Columbia	

CHARLES J. MARTIN, B.S. . . . .	<i>Fine Arts</i>
Assistant professor, Columbia	
CHARLES L. MARVIN, B.C.S. . . . .	<i>Accounting</i>
Instructor, Extension Teaching, Columbia	
DANIEL GREGORY MASON, A.B. . . . .	<i>Music</i>
Associate professor, Columbia	
WILLIAM H. McCASTLINE, M.D. . . . .	<i>University Physician</i>
University Medical Officer, Columbia	
CLARICE VALLETTE McCAULEY . . . . .	<i>English</i>
Instructor, Extension Teaching, Columbia	
HELEN McCLEES, PH.D. . . . .	<i>Greek and Latin</i>
Instructor, Extension Teaching, Columbia	
HARRY C. McCLUSKEY, C.P.A. . . . .	<i>Accounting</i>
Instructor, Extension Teaching, Columbia	
NELSON GLENN MCCREA, PH.D. . . . .	<i>Latin</i>
Anthon professor, Columbia	
ELLEN BEERS MCGOWAN, B.S. . . . .	<i>Household Arts</i>
Instructor, Teachers College	
JAMES HOWARD MCGREGOR, PH.D. . . . .	<i>Zoology</i>
Associate professor, Columbia	
JAMES O. MCKINSEY, A.M., C.P.A. . . . .	<i>Business</i>
Assistant professor, Columbia	
HAROLD RAYMOND MEDINA, LL.B. . . . .	<i>Law</i>
Associate, Columbia	
ALBERT DOUGLAS MENUT, A.M. . . . .	<i>French</i>
Instructor, Extension Teaching, Columbia	
CARL JOHN MERNER, B.P.E. . . . .	<i>Physical Education</i>
Instructor, Columbia	
SARA MERRILL . . . . .	<i>English</i>
Instructor, Extension Teaching, Columbia	
MABEL WITTE MERRITT, LL.B. . . . .	<i>Law</i>
Instructor, Extension Teaching, Columbia	
GEORGE L. MEYLAN, M.D. . . . .	<i>Hygiene</i>
Professor, Columbia	
CHARLES MILLER, LL.M. . . . .	<i>Stenography and Typewriting</i>
Instructor, Summer Session and Extension Teaching, Columbia	
NINA MILLER, M.S. . . . .	<i>Accounting</i>
Instructor, Columbia	
FREDERICK C. MILLS, PH.D. . . . .	<i>Business Organization</i>
Assistant professor, Columbia	
WILLIAM MILWITZKY, A.M. . . . .	<i>French</i>
Instructor, Extension Teaching, Columbia	



WILLIAM PEPPERELL MONTAGUE, PH.D. . . . .	<i>Philosophy</i>
Associate professor, Columbia	
PARKER THOMAS MOON, B.S. . . . .	<i>History</i>
Instructor, Columbia	
FRANK GARDNER MOORE, PH.D. . . . .	<i>Latin</i>
Professor, Columbia	
ALBERT MORAWSKI-NAWENCZ, PH.D. . . . .	<i>Polish</i>
Instructor, Extension Teaching, Columbia	
JOHN HAROLD MORECROFT, E.E., B.S. . . . .	<i>Electrical Engineering</i>
Associate professor, Columbia	
O. S. MORGAN, PH.D. . . . .	<i>Agriculture and Business</i>
Professor, Columbia	
JACQUE CYRUS MORRELL, A.M. . . . .	<i>Journalism</i>
Instructor, Extension Teaching, Columbia	
FREDERICK K. MORRIS, A.M. . . . .	<i>Geology</i>
Instructor, Columbia	
LEIGHTON B. MORSE, PH.D. . . . .	<i>Physics</i>
Assistant professor, College of the City of New York; instructor, Extension Teaching and Summer Session, Columbia	
WILLIAM E. MOSHER, PH.D. . . . .	<i>Government</i>
Staff Member, New York Bureau of Municipal Research; instructor, Extension Teaching, Columbia	
HENRI FRANÇOIS MULLER, PH.D. . . . .	<i>French</i>
Assistant professor, Columbia	
HERMANN J. MULLER, PH.D. . . . .	<i>Zoology</i>
Instructor, Columbia	
GLEN H. MULLIN . . . . .	<i>English</i>
Instructor, Extension Teaching, Columbia	
GEORGE W. MULLINS, PH.D. . . . .	<i>Mathematics</i>
Assistant professor, Columbia	
HENRY FRASER MUNRO, A.M. . . . .	<i>International Law</i>
Lecturer, Columbia	
THOMAS MUNRO, PH.D. . . . .	<i>Philosophy</i>
Instructor, Extension Teaching, Columbia	
KATHARINE MURDOCH, PH.D. . . . .	<i>Psychology</i>
Instructor, New York School of Philanthropy and Bellevue Training School for Nurses; instructor, Extension Teaching, Columbia	
S. BUTLER MURRAY, JR., PH.D. . . . .	<i>Roman Archaeology, Greek and Latin</i>
Lecturer, Columbia,	
DAVID SAVILLE MUZZEY, PH.D. . . . .	<i>History</i>
Associate professor, Columbia	
CATHERINE NEEDHAM, A.M. . . . .	<i>English</i>
Instructor, Extension Teaching, Columbia	

- CHRISTINE WARNER NELSON . . . . . *Household Arts*  
Instructor, Teachers College
- CHARLES M. NEUBAUER . . . . . *Accounting*  
Instructor, Extension Teaching, Columbia
- BELLE NORTHRUP, B.S. . . . . *Fine Arts*  
Instructor, Teachers College
- TORIBIO ESQUIVEL OBREGON, LL.D. . . . . *Commercial Law*  
Instructor, Extension Teaching, Columbia
- GEORGE C. D. ODELL, PH.D. . . . . *English*  
Professor, Columbia
- BRUNO OETTEKING, PH.D. . . . . *Anthropology*  
In the department of Physical Anthropology, Museum of the American Indian, Heye Foundation; instructor, Extension Teaching, Columbia
- WILLIAM F. OGBURN, PH.D. . . . . *Social Science*  
Professor, Columbia
- HENRI C. OLINGER, A.M. . . . . *French*  
Instructor, New York University; instructor, Summer Session and Extension Teaching, Columbia
- JOHN E. ORCHARD, A.B. . . . . *Economic Geography*  
Instructor, Columbia
- JOAQUIN ORTEGA, A.M. . . . . *Spanish*  
Instructor, Extension Teaching, Columbia
- JOSEPH O. OSGOOD, B.C.S. . . . . *Accounting*  
President, Allen Pharmacal Company; instructor, Extension Teaching, Columbia
- LEONARD OUTHWAITE, A.B. . . . . *Personnel Management*  
Instructor, Extension Teaching, Columbia
- EDSON L. OUTWIN, B.C.S. . . . . *Accounting*  
Instructor, Extension Teaching, Columbia
- ANDERSON PACE, B.S. . . . . *Advertising and Business Organization*  
Executive department, Christian Herald; instructor, Extension Teaching, Columbia
- LUIGO PARISOTTI, PH.B. . . . . *Music*  
Private instructor in singing, New York City
- HELEN HUSS PARKHURST, PH.D. . . . . *Philosophy*  
Instructor, Columbia
- FRANCES TAYLOR PATTERSON . . . . . *Photoplay Composition*  
Instructor, Summer Session and Extension Teaching, Columbia
- FRANK ALLEN PATTERSON, PH.D., *Assistant to Director, Morningside* . . *English*  
Associate professor, Columbia
- MARY HENLEY PEACOCK, PH.B. . . . . *Household Arts*  
Instructor, Teachers College
- JOSEPH LOUIS PERRIER, PH.D. . . . . *French*  
Lecturer, Columbia

- HARLOW S. PERSON, PH.D. . . . . *Personnel Management*  
Professor of Business Organization and Administration, Dartmouth; lecturer, Columbia
- A. EVERETT PETERSON, PH.D. . . . . *Government*  
Instructor, Evander Childs High School, New York City
- AUGUST PETERSON . . . . . *Physical Education*  
Athletic trainer and coach, Columbia
- ALBERT T. POFFENBERGER, PH.D. . . . . *Business and Psychology*  
Assistant professor, Columbia
- W. POLOWE . . . . . *Astronomy*  
Instructor, Extension Teaching, Columbia
- EMIL L. POST, A.M. . . . . *Mathematics*  
Lecturer, Columbia
- MAURICE PRÉVOT, A.D.G.F. . . . . *Architecture*  
Associate, Columbia
- JOHN DYNELEY PRINCE, PH.D. . . . . *History and Russian*  
Head of Slavonic department; professor, Columbia
- JOHN HERMAN RANDALL, JR. . . . . *Philosophy*  
Lecturer, Columbia
- W. W. RANKIN, A.M. . . . . *Mathematics*  
Instructor, Columbia
- WALTER RAUTENSTRAUCH, M.S. . . . . *Factory Management*  
Consulting engineer; professor, Columbia
- WILLIAM H. REEVES, A.M. . . . . *Economics*  
Instructor, Columbia
- KATHARINE CAMPBELL REILEY, PH.D., *Assistant to Director*  
*Comparative Literature*  
Adviser to women, Extension Teaching; assistant professor, Columbia
- ARTHUR F. J. REMY, PH.D. . . . . *Germanic Philology*  
Associate professor, Columbia
- LELAND REX ROBINSON, PH.D. . . . . *Economics*  
Instructor, Columbia
- MABEL L. ROBINSON, PH.D. . . . . *English, Vocational Guidance*  
Educational investigator, Carnegie Foundation; instructor, Extension Teaching, Columbia
- EMILIE G. ROBSON . . . . . *Nursing and Health*  
Instructor, Teachers College
- ERWIN W. ROESSLER, PH.D. . . . . *German*  
Chairman, department of modern languages, New York High School of Commerce; instructor, Extension Teaching, Columbia
- JOHN F. D. ROHRBACH, C.P.A. . . . . *Accounting*  
Instructor, Columbia
- MARY SWARTZ ROSE, PH.D. . . . . *Household Arts*  
Associate professor, Columbia

FRANK A. ROSS, A.M.	<i>Sociology</i>
Instructor, Columbia	
ALBIN RUSSMAN	<i>Accounting</i>
Instructor, Extension Teaching, Columbia	
EDWARD J. RYAN, A.B.	<i>Stenography and Typewriting</i>
Instructor, Extension Teaching, Columbia	
DOROTHY SCARBOROUGH, PH.D.	<i>English and Secretarial Correspondence</i>
Lecturer, Columbia	
CLAUDE EDWARD SCATTERGOOD, M.S., LL.B.	<i>Business Statistics</i>
Lecturer, Columbia	
OTTO P. SCHINNERER, A.M.	<i>German</i>
Lecturer, Columbia	
FREDERICK WILLIAM SCHOLZ, A.M.	<i>Accounting</i>
Instructor, Columbia	
HENRY H. L. SCHULZE, A.M.	<i>German</i>
Assistant professor, Columbia	
ROBERT LIVINGSTON SCHUYLER, PH.D.	<i>History</i>
Associate professor, Columbia	
MAY KIRK SCRIPTURE	<i>Speech</i>
Lecturer, Teachers College	
BERTHA E. SHAPLEIGH	<i>Household Arts</i>
Instructor, Teachers College	
W. SHAW-THOMSON	<i>Advertising</i>
Instructor, Extension Teaching, Columbia	
THEODORE LESLIE SHEAR, PH.D.	<i>Greek Archaeology</i>
Lecturer, Princeton; associate, Columbia	
LAMBERT A. SHEARS, A.M.	<i>German</i>
Instructor, Extension Teaching, Columbia	
HERBERT N. SHENTON, A.M.	<i>Sociology</i>
Instructor, Columbia	
WILLIAM R. SHEPHERD, PH.D., L.H.D.	<i>History</i>
Professor, Columbia	
WALTER I. SLICHTER, E.E.	<i>Cable Telegraphy</i>
Professor, Columbia	
CHARLES F. SMITH, B.S.	<i>Scouting</i>
Instructor, Teachers College	
GUY EDWARD SNIDER, PH.D.	<i>Foreign Trade</i>
Associate professor, College of the City of New York; instructor, Extension Teaching, Columbia	
ALEXANDER GUY HOLBORN SPIERS, PH.D.	<i>French</i>
Associate professor, Columbia	
ALLAN P. SPRINGER, A.M.	<i>French</i>
Instructor, College of the City of New York	



EDGAR W. STANTON . . . . .	<i>Accounting</i>
Instructor, Extension Teaching, Columbia	
GASTON M. STEPHENS . . . . .	<i>Business Organization</i>
Assistant, Columbia	
ALBERT H. STEVENSON, D.D.S. . . . .	<i>Oral Hygiene</i>
Professor, Columbia	
ARCHIBALD HERBERT STOCKDER, A.M. . . . .	<i>Business Organization</i>
Instructor, Columbia	
CORNELIA H. STONE, A.B. . . . .	<i>Household Arts</i>
Instructor, Teachers College	
EDGAR S. STOWELL . . . . .	<i>Music</i>
Instructor, Teachers College	
HARVEY JULIAN SWANN, PH.D. . . . .	<i>French</i>
Instructor, Extension Teaching, Columbia	
JOHN B. SWINNEY, A.B. . . . .	<i>Merchandising Research</i>
Instructor, Extension Teaching, Columbia	
SALLIE B. TANNAHILL, B.S. . . . .	<i>Fine Arts</i>
Instructor, Teachers College	
A. DE V. TASSIN, A.M. . . . .	<i>English</i>
Assistant professor, Columbia	
RUPERT TAYLOR, PH.D. . . . .	<i>English</i>
Lecturer, Columbia	
T. C. TAYLOR, CHEM.E., PH.D. . . . .	<i>Chemistry</i>
Instructor, Extension Teaching; lecturer, Columbia	
ASHLEY H. THORNDIKE, PH.D. . . . .	<i>English</i>
Professor, Columbia	
WILLIAM TILLY . . . . .	<i>Phonetics</i>
Instructor, Summer Session and Extension Teaching, Columbia	
FREDERICK TILNEY, PH.D. . . . .	<i>Neurology</i>
Professor, Columbia	
EVELYN SMITH TOBEY, B.S. . . . .	<i>Household Arts</i>
Instructor, Teachers College	
GRETCHEN TODD, A.B. . . . .	<i>Spanish</i>
Instructor, Smith	
WILLIAM P. TRENT, D.C.L. . . . .	<i>English</i>
Professor, Columbia	
J. C. TRESSLER, A.M. . . . .	<i>English</i>
Head of the English department, Newtown High School, New York City; assistant professor, Syracuse; instructor, Extension Teaching, Columbia	
LEVERING TYSON, A.M. . . . .	<i>Assistant to the Director, Home Study Courses</i>
CHARLES BABCOCK UPJOHN . . . . .	<i>Fine Arts</i>
Instructor, Teachers College	

- JOSEPH ANTHONY VAETH, PH.D. . . . . *Spanish*  
Instructor, New York University; instructor, Extension Teaching, Columbia
- MAY B. VAN ARSDALE, B.S. . . . . *Household Arts*  
Associate professor, Columbia
- SADIE B. VANDERBILT, B.S. . . . . *Household Arts*  
Instructor, Teachers College
- LA RUE VAN HOOK, PH.D. . . . . *Greek*  
Associate professor, Columbia
- THURMAN WILLIAM VAN METRE, PH.D. . . . . *Railway Traffic Management*  
Associate professor, Columbia
- GEORGE HENRY VAN TUYL . . . . . *Commercial Arithmetic*  
Instructor, Extension Teaching, Columbia
- FELICIU VEXLER, A.M. . . . . *French and Spanish*  
Instructor, Extension Teaching; assistant professor, Columbia
- HERMANN T. VULTÉ, PH.D. . . . . *Household Arts*  
Assistant professor, Columbia
- SCHUYLER CRAWFORD WALLACE, A.M. . . . . *History*  
Instructor, Extension Teaching, Columbia
- HAROLD VANDERVOORT WALSH, B.ARCH. . . . . *Architecture*  
Instructor, Columbia
- PETER T. WARD, A.B., LL.B. . . . . *Business English*  
Instructor, Extension Teaching, Columbia
- GERALD WEEMAN . . . . . *Physical Education*  
Instructor, Columbia
- F. WENNER . . . . . *German*  
Instructor, Extension Teaching, Columbia
- BESSIE SCOTT WHITE . . . . . *Household Arts*  
Instructor, Teachers College
- MAY JOSEPHINE WIETHAN, A.C.M. . . . . *Music*  
Lecturer, Teachers College
- IRA S. WILE, M.D. . . . . *Dietetics and Nutrition*  
Department of Health, New York City; instructor, Extension Teaching, Columbia
- LAWRENCE A. WILKINS, A.M. . . . . *Spanish*  
Instructor, Extension Teaching, Columbia
- GERALD THOMAS WILKINSON, A.M. . . . . *French*  
Instructor, Columbia
- BLANCHE COLTON WILLIAMS, PH.D. . . . . *English*  
Professor, Hunter; instructor, Summer Session and Extension Teaching, Columbia
- DAVID MCK. WILLIAMS, F.A.G.O. . . . . *Music*  
Organist, St. Bartholomew's Church, New York
- JESSE FEIRING WILLIAMS, M.D. . . . . *Physical Education*  
Associate professor, Columbia

CHARLES-EDWARD A. WINSLOW, A.M. . . . .	<i>Public Health</i>
Lecturer, Teachers College	
SAMUEL LEE WOLFF, PH.D. . . . .	<i>English</i>
Lecturer, Columbia	
THOMAS DENISON WOOD, M.D. . . . .	<i>Physical Education</i>
Head of the department of Physical Training; professor, Columbia	
JOSEPH H. WOODWARD, PH.B. . . . .	<i>Life Insurance</i>
Lecturer, Columbia	
ROBERT SESSIONS WOODWORTH, PH.D. . . . .	<i>Psychology</i>
Professor, Columbia	
T. L. WOOLHOUSE, C.P.A. . . . .	<i>Accounting</i>
Instructor, Extension Teaching, Columbia	
ERNEST HUNTER WRIGHT, PH.D. . . . .	<i>English</i>
Associate professor, Columbia	
JAMES J. WRIGHT . . . . .	<i>Stenography and Typewriting</i>
Instructor, Summer Session and Extension Teaching, Columbia	
BERNADINE MEYER YUNCK . . . . .	<i>Physical Education</i>
Instructor, Teachers College	

## INTRODUCTORY

Note. The University opens Wednesday, September 22, and classes begin Thursday, September 23, 1920, in the Winter Session. The Spring Session will open February 2, 1921, and classes will begin on that date.

The Statutes of the University (Section 250) define Extension Teaching as "instruction given by University officers and under the administrative supervision and control of the University, either away from the University buildings, or at the University, for the benefit of students not able to attend the regular courses of instruction."

**Students.** Courses in Extension Teaching are planned for two classes of students: *first*, men and women who can give only a portion of their time to study and who desire to pursue subjects included in a liberal education of the character and grade of a college or professional school, but without any reference to an academic degree; *second*, those who look forward to qualifying themselves to obtain in the future academic recognition, involving acceptance of the work which they may satisfactorily complete in Extension Teaching.

**Courses of Instruction.** Regular courses of instruction are offered in Extension Teaching which in many instances are coordinated so as to form the first years of collegiate and professional work, thus providing in the evening at Morningside Heights and elsewhere, courses in subjects which are generally offered in the freshman, sophomore, and junior years of college, so that students may qualify themselves for admission with advanced standing to Columbia or other institutions as candidates for the degrees of Bachelor of Arts and Bachelor of Science.

Under the direction of the University Council courses are offered in Extension Teaching which count toward the degrees of Master of Arts and Doctor of Philosophy.

There are also offered at Morningside Heights in the evening, subjects which are required of students for entrance to the Schools of Mines, Engineering, and Chemistry, so that a student may pursue some special line of scientific study or prepare himself for advanced study in these Schools. Classes in these Schools are open only to those who have had a preliminary course of three years in Columbia College or the equivalent. This preliminary collegiate training may be taken in part or in full in Extension Teaching in the evening by students engaged in business during the day. See pp. 11, 12.

Evening courses are offered in architecture leading to a certificate, which correspond to courses of the Columbia University School of Architecture.

Evening classes in business, open as individual courses or forming a four-year series leading to a certificate and preparing for the State examination for the certificate of Certified Public Accountant, are given at Morningside Heights. A special circular describing these courses in detail will be mailed upon request. See also pp. 8, 9.

A series of courses intended to equip students for the position of private secretary is also offered. These courses are described in a special circular which will be mailed on application. See also pp. 14, 15.



Many courses are offered which aid a student to prepare for the Schools of Business, Dentistry, Law, and Medicine, or to complete his preparation for Columbia College. See pp. 10, 11.

A two-year course in practical optics is offered in cooperation with the Department of Physics for the special training of those who desire to become optometrists. A special circular will be mailed upon request.

Courses are offered in agriculture for those who desire special work in that subject.

Under the Extension Teaching Department are offered also a number of classes in dentistry. These include graduate courses for practitioners, intended for graduates of reputable dental institutions, and classes in oral hygiene for licensed dental hygienists, designed to train women for the practice of operative dental hygiene. They are offered at the College of Physicians and Surgeons and the Vanderbilt Clinic, Fifty-ninth Street and Tenth Avenue.

A large number of other courses in varied subjects are given late in the afternoon and on Saturday, which repeat those in liberal studies offered in the Schools of the University. These are given in the same manner and often by the same instructors as the regular courses. In most instances credit may be granted by the various schools of the University.

Courses covering the first two years of collegiate study and supplying the pre-professional years of the Long Island College Hospital are given at that institution. See special circular.

Numerous classes are given at various centers. These are either regular courses of collegiate grade, or short lecture courses without academic credit.

Centers for the study of choral music are maintained at Morningside Heights and Brooklyn, and large choral concerts are given during the year.

The Department of Extension Teaching maintains also the Institute of Arts and Sciences, described on p. 15.

A series of Home Study Courses has been instituted by the Department of Extension Teaching. Full particulars will be given upon application. See pp. 15, 16.

**Registration.** Each student is required to complete his registration in accordance with the following procedure:

He must go to the office to the Registrar in person and there file a registration blank, giving a statement of the courses he is authorized to pursue and such other information as may be necessary for record; and he must pay his fees to the Bursar.

Registration begins

Winter Session: Wednesday, September 15, 1920

Spring Session: Thursday, January 27, 1921

The office of the Registrar, Room 315 University Hall (East Corridor) will be open for Extension Teaching students at the following hours:

#### *Daytime*

Regularly throughout the Winter and Spring Sessions, 9 a. m. to 5 p. m.  
Saturdays throughout the Winter and Spring Sessions, 9 a. m. to 12 m.  
(On the first four Saturdays of each Session, 9 a. m. to 2 p. m.)

*Evenings*

Regularly except Saturday throughout the Winter and Spring Sessions, 7 to 9 p. m.

(For four weeks following the first day of registration in each Session, 7 to 9.30 p. m.)

Students of the Winter Session desiring to continue work at the University in the Spring Session are expected to renew their registration before February 12, by filing with the Registrar their new list of courses. After that date renewal or payment of fees may be accepted only upon payment of the additional fee of \$6.00 for late registration. Students registering for the first time after October 2 and February 12 are not required to pay the late registration fee of \$6.00, except when payment of fees is not completed within a week after the initial registration.

Students taking courses at a local center will register at that center, in accordance with instructions given in the circulars describing the courses.

When students report at the office of the Registrar not later than October 2 for the Winter Session and not later than February 12 for the Spring Session that they have discontinued any or all courses for which they were duly registered, the tuition fees are returned; when they report after that date no rebate or credit is allowed. The University fee is not subject to rebate. Occasional exceptions to this rule may be made in cases where it is unmistakably best for a student to change from one course to another; such changes must be for sound educational reasons and must be approved in writing by the Director, or some one in authority in his office.

After October 2 and February 12, respectively, students who are obliged to withdraw entirely from the University because of serious personal illness, and only such, may be allowed a partial rebate of their tuition fees. In considering such applications, the student will ordinarily be charged ten per cent. of the total tuition fee for each week of the Session up to the date his written notice of withdrawal is received by the Registrar.

**Attendance before Registration.** Students are permitted to attend any class once before registering.

The last day of registration for students desiring credit in Extension Teaching is October 2, 1920, and February 12, 1921. Registrations for credit are sometimes accepted after this date, however, depending upon the number of courses which the student wishes to take, the size of the classes, his previous instruction, and other details. Absences will be counted against the student from the first day of each Session.

**Payment of Fees.** Unless otherwise directed, students will pay all fees at the office of the Bursar, Room 310, University Hall (West Corridor). Checks should be drawn to the order of Columbia University and presented in person, or forwarded by mail to the office of the Bursar.

Payment of fees begins:

Winter Session: Wednesday, September 15, 1920

Spring Session: Thursday, January 27, 1921

The office of the Bursar, Room 310 University Hall, will be open for Extension Teaching students at the following hours:

*Daily*

During Winter and Spring Sessions, from 9:30 a. m. to 5 p. m.

Saturday, during Winter and Spring Sessions, from 9:30 a. m. to 12 m.

(On the first four Saturdays of each Session, 9:30 a. m. to 2 p. m.)

*Evenings*

Winter Session from September 15 to October 1, 7 to 9:30 p. m.

Mondays and Fridays only from October 4 to October 29, 7 to 9 p. m.

Spring Session from January 27 to February 11, 7 to 9:30 p. m.

Mondays and Fridays only from February 14 to February 25, 7 to 9 p. m.

**Fees.** *University Fee* for students in Extension Teaching exclusively, for each year or part thereof, \$6.00.

*Tuition Fees.* The fee for each Session is announced in the description of the course.

The University statutes provide that the University fee, tuition fees, and laboratory deposits are payable in full in advance. Registration will not be complete until such fees are paid. Payment of fees after

October 2, 1920, Winter Session or

February 12, 1921, Spring Session

automatically imposes the statutory charge of \$6.00 for the privilege. (See Registration, p. 3.) Students registering for the first time after these dates are not required to pay the late registration fee of \$6 except when payment of fees is not completed within a week after the initial registration.

Under the regulations, the privileges of the University are not available to any student until he has completed his registration.

**Admission.** The classes in Extension Teaching are planned first for mature students, whose chief interest lies outside the University, and who have leisure to pursue only a few courses in the late afternoon or at night. For such students no entrance examinations are exacted. The sole condition is that these students show that they are qualified to pursue the work with profit. All courses are open, unless otherwise stated, both to men and women.

Students, however, who desire to take complete programs in Extension Teaching and are giving their attention to study at the University alone, are subject to the following definite restrictions:

1. They must be at least eighteen years of age.
2. Except for reasons of weight, students under twenty-four years of age will be required to possess a full high school education in order to be qualified for admission to all except preparatory courses. Credentials should be submitted at least two weeks before registration. Blanks for this purpose will be sent on application.
3. They are required to elect approved programs aggregating as many points as is judged wise by the advisers. The minimum program is usually twelve points. In arranging their programs, students will be expected to select correlated subjects leading to some definite end. All students under twenty-four years of age must have their programs approved in the office of Extension Teaching before registration. These students must attend their classes regularly and maintain passing grades in their subjects.



4. Students who come from other universities or colleges without diplomas or certificates, must submit complete records of preparatory and college work, and statements certifying to their honorable dismissal. These records should be presented at least two weeks before the opening of the Session.

5. No changes of program will be permitted beyond the second Saturday after the opening of each Session, except by special permission of the Director.

With students who intend to begin or resume regular attendance under any faculty of the University, the question of academic credit for Extension Teaching courses should in every case be considered and approved by the designated representative of the Committee on University Admissions. Proper blanks may be obtained in the office of Extension Teaching.

The admission and continuance upon the rolls are subject to the full disciplinary power of the University authorities as prescribed by the statutes of the University.

A matriculated student is expected to conform to the rules for registration of the college or school of which he is a member. Students who expect later to apply for credit must secure approval of their schedules before registration. Record of attendance will date for matriculated students from September 23, 1920, and February 2, 1921.

Matriculated students in the various schools of the University will be allowed to attend courses in Extension Teaching in accordance with the regulations of the several schools.

**Office.** The office of Extension Teaching is Room 301 University Hall. Full information as to this Department may be obtained at this office, which is open from 9 a. m. to 5 p. m., daily, Saturday, 9 a. m. to 2 p. m. The office will be open every evening, except Saturday, from 7:30 to 9:30 p. m., from September 15 to October 1, 1920, and from January 27, to February 11, 1921; also every Thursday from 7:30 to 9:30 p. m., throughout the Winter and Spring Sessions. When this office is not open, students are referred to the office of the Registrar, Room 315 University Hall.

**Privileges.** Students taking six points each Session have the privileges of the Library and, in the case of men, the University Gymnasium. Under certain conditions, depending upon the amount of work taken, women students in Extension Teaching may reside in Furnald Hall; men students in Thompkins, Morris, Hartley and Livingston Halls. (See Residence Halls, below.)

Attention is called to the restaurant service at the University Commons, maintained for the use of students where a dining-room for men and women is located.

A club room for women students is located on the first floor of Philosophy Hall at the left of the entrance to the University. This room is open during the day and evening for the use of women students and their guests. A rest room for women students in Extension Teaching in 709 Journalism Building is open in the morning and afternoon. A coat room in the basement of Journalism is provided for the use of students.

**Residence Halls.** Concerning the University residences for men, Hartley, Thompkins, Morris, and Livingston Halls, full information may be obtained by applying to the Superintendent of Buildings and Grounds of Columbia University.



The privilege of residence in these dormitories is limited, for men in Extension Teaching, to students in good standing, pursuing programs aggregating not less than twelve points each Session and maintaining consistently passing grades in all subjects.

#### *Furnald Hall*

This University dormitory will be assigned to the use of women students in the academic year 1920-1921. The privilege of residence is limited for women in Extension Teaching to students in good standing, pursuing programs approved by the Director, aggregating not less than fourteen points of work each Session of collegiate or professional grades, and maintaining consistently passing grades in all subjects. All of these students must have completed a full secondary education in an approved high school. Detailed information in regard to rooms and rates in Furnald Hall may be obtained by applying to the office of the Superintendent of Buildings and Grounds.

#### *Thompkins and Morris*

The University has recently acquired for use as residence halls two modern apartment houses, Thompkins and Morris, situated on Claremont Avenue near 116th Street, and overlooking the buildings and campus of Columbia University and Barnard College.

The buildings are eleven stories high and of attractive plan. They are lighted by electricity, heated by steam, and have telephone and electric elevator service.

Approximately 200 rooms (in Thompkins and Morris) will be available for men in the Winter Session of 1920, which will be suitably equipped with beds, chiffoniers, mirrors, chairs, blankets, sheets, pillow cases and towels. The arrangements permit a flexibility of assignment as single rooms, double rooms, and rooms in suites. There are adequate bathroom accommodations in each apartment, and many of the bedrooms have hot and cold running water. Rooms suitable for social and administrative purposes will be provided. The buildings will be operated along the same general lines and under the same administrative rules as govern Hartley and Livingston Halls.

The rates for each person per week will be given on request. They include heat, light, and service, and a supply of bed linen and towels with the washing of the same. The prices are governed by the size, the exposure, the location, and the elevation of the rooms, and by the number of occupants in each room.

For detailed information in regard to the location and rates, apply to the Superintendent of Buildings and Grounds, Room 110, Library Building, Columbia University.

#### *Residence Outside the Halls*

Detailed information and advice concerning desirable rooms and boarding places for both men and women may be obtained by writing to the Residence Bureau, Room 301 Philosophy Hall.

All women students under twenty-four years of age who are not living at home are required to live in a dormitory, or to obtain permission to do otherwise from the Adviser of Women in Extension Teaching, Professor Katharine Campbell

Reiley. Such students will not be allowed to complete their registration until their proposed living arrangements have been approved by this officer, whose signature must be obtained. In general, younger women students are not expected to take rooms in places where no reception room is provided for their guests. Students may confer with the Adviser on any afternoon, except Saturday, between 2 and 4, in Room 301 University Hall, or if necessary by special appointment. *All women students are requested to consult with the Adviser of Women before engaging rooms offered by unauthorized persons.*

**Location.** Intramural collegiate and professional courses will be given at Columbia University. Extramural courses will be given at the Long Island College Hospital, corner of Henry and Amity Streets, Brooklyn; at Asbury Park; Bridgeport; Hackensack; Hartford; Scranton; South Norwalk; Trenton; and Yonkers; and at centers where there may be sufficient demand.

Classes will also be conducted at the New York Chapter of the American Institute of Banking, 138 East Thirty-fifth Street.

The most convenient means of access to the University are the Subway (Broadway Branch) to 116th Street, Columbia University Station, and the Broadway or Amsterdam Avenue surface lines.

**Calendar and Hours.** Columbia University opens on Wednesday, September 22, and Extension courses begin Thursday, September 23. The academic calendar calls for thirty weeks of actual class work. The examination period for the Winter Session begins January 24. The Spring Session will open February 2, and the Extension classes will begin on that date. The examination period for the Spring Session begins May 23. The examinations are given in the hours usually assigned to recitation and lectures. The calendar for Extension Teaching in general is the academic calendar of the University, except in regard to examinations. There will be no classes in Extension Teaching on the following days: Election Day, November 2; Thanksgiving Day and the two days following (November 25, 26, and 27); December 22 to January 4 inclusive; February 22; March 24 to 28, inclusive; May 30. There will be classes on February 12. See pp. 152, 153.

Extension courses are usually given in the afternoon and evening of every week day and on Saturday morning.

**Absences.** It is a student's duty to attend punctually each class or laboratory exercise in each course. For credit toward a degree or for a certificate of proficiency, attendance at nine-tenths of the sessions is required in addition to the proficiency attested by class work and examination. Absences are counted from the first meeting of the class in each Session.

A student may be absent without penalty in a Session as follows: from a course meeting once weekly, twice; from a course meeting twice weekly, three times; from a course meeting three times weekly, four times; from a course meeting four times weekly, five times; from a course meeting five times weekly, six times.

In case this limit is exceeded, a student receiving a grade of C or higher may submit a statement showing the cause of each absence. If, in the judgment of the Administrative Board, these causes were imperative, full or partial credit for the course may be assigned by the Director upon the recommendation of the

Administrative Board, in accordance with the extent and reason of the student's absences and the standing attained in the course.

Tardiness counts as half an absence.

For discontinuance of attendance or cancellation of registration, students must present their applications at the office of Extension Teaching.

**Examinations.** Two examinations are regularly held, one at the close of the Winter Session, and the second on the termination of the course. See "Calendar and Hours" p. 7. (The final examinations in some of the accounting classes do not follow the usual Extension Teaching schedule, but are held on Saturday of the examination week in Extension Teaching. Examinations are held both at 2:30 p. m. and 7:30 p. m., the student choosing the session which he will attend.) A mid-term report is sent to the Registrar by the various instructors, approximately on November 15 and March 25. For examination at special times, the fee is \$6 for each course.

Students who fulfill the conditions of registration, attendance, and accomplishment of work prescribed, together with the payment in full of the fee for the course, will receive a report of standing from the Registrar within three weeks after the close of each Session.

The student's performance in a course is reported according to the following grades: A, excellent; B, good; C, fair; D, poor (not passing); F, total failure. In graduate courses, P indicates passed; F, failure. H indicates a record of satisfactory attendance only.

**Deficiency Examinations.** The grade F received in any course as a final mark does not allow the student under any circumstances to take a deficiency examination. The grade D is not a passing mark; it does, however, allow the student to apply for a deficiency examination. Deficiency examinations are held only twice annually. For a student conditioned in the Winter Session, the examination will be held in April, and applications must be filed with the Registrar before March 1. For a student conditioned in the Spring Session, the examination will be held in September, and applications must be filed by August 1. Deficiency examinations will not be given at other times; nor will they be allowed after the lapse of one year from the date when incurred.

**The University Press Book Store.** The University Press Book Store, situated in the Journalism Building, supplies students and officers with text-books and other needed material at stated discounts from list prices. These discounts are fixed by the Trustees of the Columbia University Press. The store will be open daily from 8:15 a. m. to 6 p. m.; Saturday from 8:15 a. m. to 5 p. m. It will also be open in the evening from September 22 to October 28, and from February 2 to February 26, until 9 p. m.

**Architecture.** In regard to courses leading to the Certificate of Proficiency, see special bulletin, "Courses in Architecture Leading to the Certificate of Proficiency."

**Business.** Columbia University, through its Extension Teaching Department, offers evening courses in business, including a complete series of classes leading to the Certificate in Business. For full particulars see the Announcement of Evening Courses in Business.

**School of Business.** Graduates of high schools, who have satisfactorily completed in the Department of Extension Teaching work equivalent to that offered



by Columbia College or Barnard College in the first two years, will be admitted to the School of Business. The degree of B.S. in Business is conferred upon the completion of the course in the School of Business. Those who desire to complete in Extension Teaching the two preliminary years of collegiate work should follow the program suggested below, completing 64 points, including English eA1-A2, and one year of an approved course in English literature; two years of French or Spanish or German; Philosophy e1-2; History e1-2; Economics e1-2; Business e11-12; Mathematics eA1 and eA3; and 15 points in electives.

**College Course.** Students who are unable for financial reasons to enter college upon graduation from a secondary school, may upon completion of the entrance requirements profitably continue their training through Extension Teaching classes while employed during the daytime, with the expectation of being later admitted to Columbia College with advanced standing as candidates for the degree of Bachelor of Arts.

### *Arrangement of Collegiate Subjects*

Students in Extension Teaching should regard as of first importance the selecting of subjects of study which are immediately of value to them and not undertake their work with the primary object of obtaining academic recognition. They will be assisted in selecting their subjects of study in the office of the Director, Room 301 University Hall.

The following arrangement of courses is given here as an aid in the grouping of subjects and not as indicating any convenient route to a degree.

FIRST YEAR		THIRD YEAR	
	<i>College Points</i>		<i>College Points</i>
English eA1-A2 . . . . .	6	Philosophy . . . . .	4
Modern language . . . . .	6	History e1, e2 . . . . .	6
Mathematics . . . . .	4	English e17-18 . . . . .	4
	—	Modern language . . . . .	2
	16		—
			16
SECOND YEAR		FOURTH YEAR	
	<i>College Points</i>		<i>College Points</i>
English eB1-B2 . . . . .	4	English e23-24 . . . . .	4
Philosophy e1-2 . . . . .	6	Zoology e1a-2a . . . . .	4
Modern language . . . . .	6	Economics e1-2 . . . . .	6
	—	Government e1-2 . . . . .	6
	16		—
			20
FIFTH YEAR			
	<i>College Points</i>		<i>College Points</i>
Modern language . . . . .	6		
History . . . . .	6		
Science . . . . .	8		
	—		
Total . . . . .	88		



**College Entrance Course.** Mature students who are unable to attend a secondary school and other persons engaged in business throughout the day may prepare themselves for college by pursuing courses in Extension Teaching. These courses are not open to immature students nor to any who should be in high school or a preparatory school. The following schedule is suggested for those who desire a complete training in subjects required for college entrance. Students may elect the complete course or only such classes as they may need.

In order to count any course in Extension Teaching toward admission, candidates must, before beginning the course, secure written permission from Professor A. L. Jones, Director of Admissions, Room 321 University Hall; except candidates for admission to Barnard College, who must secure written permission from the Dean of Barnard College.<sup>1</sup>

Persons of unusual ability may complete the entire schedule given below in less than four years; this is true especially of those who may be able to attend in the late afternoons as well as at night.

*First Year*  
English eW1-W2  
One elementary language  
Mathematics eX3, eX6

*Second Year*  
English eX1-X2  
Intermediate language  
Mathematics eY1

*Third Year*  
English eY1-Y2  
History eX1-X2  
Physics eA1-A2

*Fourth Year*  
Chemistry eA1  
Mathematics eA1, A2  
Elective subjects

A complete list of courses given in Extension Teaching that may be offered for entrance credit follows:

Botany e1 or e2, for botany  
Chemistry eA1 or eA2, for chemistry  
Drawing eW1 or eW2, for drawing  
English eW1-W2 and eX1-X2 for English 1  
English eY1-Y2, for English 2  
French eA1-A2, for elementary French  
French eB1, for intermediate French  
French eB2, for advanced French  
\*Geography e25-26, for physical geography  
German eA1-A2, for elementary German  
German eB1, for intermediate German  
German eB2, for advanced German  
Greek e1-2, for Greek *a*, *b*, and *g*  
History eX1 or eX2, for American History *g*  
\*History e5-6, for Ancient History *a*

<sup>1</sup> While work done in University Extension Teaching courses is not primarily accepted in lieu of entrance examinations to Barnard College, entrance conditions may be removed by a grade of at least C, subsequently obtained in the appropriate Extension courses. In exceptional cases, for reasons of weight, the Dean may grant permission to a student to count an Extension course for entrance credit, without her having taken an entrance examination in the subject.

\*This course is a collegiate subject, counting for credit toward degrees. If the entire course in both Sessions is completed, one-half of the credit may count for the removal of entrance conditions, and the remainder toward a degree.

Italian eI-2 for elementary Italian

Latin eXI-X2 or eX8 and eX3, for second-year Latin

Latin eY1 or eY8, for Vergil

Latin eY3 or eY4, for third-year Latin

Latin eY5 or eY6, for advanced Latin prose composition

Mathematics eXI or eX2 or eX3, eX6, for elementary algebra

Mathematics eXI or eX2 or eX5 or eX6 for algebra, quadratics and beyond

Mathematics eY1 or eY2, for plane geometry

Mathematics eA1, eA3, eI (any two), for advanced mathematics

\*Physics eA1-A2, for elementary physics

Spanish eA1-A2, for elementary Spanish

Spanish eB1, for intermediate Spanish

Zoology era-2a, for zoology

**Engineering Courses.** In taking classes in engineering and allied subjects in Extension Teaching a student may adopt one of two methods in arranging his studies. (1) He may select only the class or classes in which he is especially interested, and which will be of most immediate assistance to him in his present work. In every case he must be careful that he possess all the prerequisites for each course which he proposes to pursue. Extension Teaching offers many classes of this nature, planned especially for mature students already engaged in engineering work and at liberty to devote only a few evenings a week to professional study. Such courses do not in themselves lead to any degree, though some of them bear credit applicable to degrees, when other conditions have been fulfilled, as stated below. (2) The student may plan his work in such a way that when supplemented by day attendance, after having completed satisfactorily the entrance requirements, it will lead ultimately to a degree in engineering.

A student desiring to matriculate in the Schools of Mines, Engineering, and Chemistry is required to present, in addition to the regular four years of the preparatory school, at least three years of collegiate work.

Extension Teaching has provided a schedule whereby a student can complete this collegiate preparation by studying in the evening. He will then be allowed to enter the Schools of Mines, Engineering, and Chemistry, provided always that he has satisfied the requirements in regard to the work of the preparatory school. The collegiate course outlined below is that recommended by the Faculty of Applied Science in Columbia University. It presupposes a full four-year high-school course, including, among other subjects, intermediate algebra, solid geometry, trigonometry, physics, chemistry, four years of English, and three years of a modern language.

In order to avoid conflicts the subjects should generally be taken in the order suggested, though in many cases the program will necessarily be rearranged to suit the needs of the individual student. All persons thinking of pursuing this course are urged to confer with the officers of Extension Teaching in Room 301 University Hall. A few subjects in the third, fourth, and fifth years are not given at present in Extension Teaching, but they will be added as the need arises.

\* This course is a collegiate subject, counting for credit toward degrees. If the entire course both Sessions is completed, one-half of the credit may count for the removal of entrance conditions, and the remainder toward a degree.

## FIRST YEAR

<i>Winter Session</i>		<i>Spring Session</i>	
	<i>Points</i>		<i>Points</i>
English eA1 . . . . .	3	English eA2 . . . . .	3
Mathematics e1 . . . . .	3	Mathematics e4 . . . . .	3
Physical education eA1 . . . . .	2	Physical education eA2 . . . . .	2
History e1 . . . . .	3	History e2 . . . . .	3
	<hr/>		<hr/>
	11		11

## SECOND YEAR

<i>Points</i>		<i>Points</i>	
Mathematics e55 . . . . .	3	Mathematics e56 . . . . .	3
Philosophy e1 . . . . .	3	Philosophy e2 . . . . .	3
English e17 . . . . .	2	English e18 . . . . .	2
English eB1 . . . . .	3	English eB2 . . . . .	3
Economics e1 . . . . .	3	Economics e2 . . . . .	3
	<hr/>		<hr/>
	14		14

## THIRD YEAR

<i>Points</i>		<i>Points</i>	
Chemistry e3 . . . . .	5	Chemistry e4 . . . . .	5
French eB9 or German eE1 . . . . .	3	French e4a or German eE2 . . . . .	3
Mathematics e57 . . . . .	3	Mathematics e22 . . . . .	3
	<hr/>		<hr/>
	11		11

## FOURTH YEAR

<i>Points</i>		<i>Points</i>	
Chemistry e11 . . . . .	5	Chemistry e12 . . . . .	5
Mechanics e1 . . . . .	2	Physics e6 . . . . .	6
Elective . . . . .	2		<hr/>
	<hr/>		11
	9		

## FIFTH YEAR

<i>Points</i>		<i>Points</i>	
Mechanical drawing e1 . . . . .	2	Mechanical drawing e2 . . . . .	2
Mechanical drawing e3 . . . . .	2	Mechanical drawing e4 . . . . .	2
Physics e7 . . . . .	7½	Physics e8 . . . . .	7½
Physics e49 . . . . .	1½	Physics e50 . . . . .	1½
	<hr/>		<hr/>
	13		13
		Electives . . . . .	6
		Total . . . . .	124

A scholarship, affording free tuition in the graduate courses of the Schools of Mines, Engineering, and Chemistry will be given each year to the student who completes the above outlined evening course with the highest record.

**Law.** In order to secure the degree of Bachelor of Laws from Columbia University, a student must present 94 points of collegiate study before entering the course. Students planning at some future time to study law are, therefore, advised to complete the collegiate work outlined on p. 9, which, when supplemented by one course of six points, will answer the entrance requirements provided the student has also satisfactorily completed the 15 units of high-school studies required for entrance to college.

**Medicine.** In order to enter the College of Physicians and Surgeons in Columbia University, students must present two years of collegiate study, amounting to at least 72 points in addition to the regular high-school preparation.

This work must include one year of physics, one year of inorganic chemistry based on college entrance chemistry, one-half year of qualitative analysis, one-half year of organic chemistry, one year of biology, two years of college English, and the equivalent in either French or German of Courses A and B as prescribed by Columbia College. Students should obtain the current *Announcement of the College of Physicians and Surgeons* where these requirements are stated in full.

Students intending later to study medicine may complete the evening collegiate course outlined on p. 9, which will answer the collegiate requirements for admission. It is necessary, however, that they include advanced courses in chemistry (two years consisting of general inorganic, qualitative, and organic), physics, zoology (one full year each), English, two years, and French or German at least one year beyond the elementary requirement. Before registering for any collegiate classes in the pre-medical course, students must have satisfactorily answered the requirements for admission to Columbia College.

**Collegiate courses at the Long Island College Hospital.** Columbia University offers a two-year course of collegiate training at The Long Island College Hospital, Amity and Henry Streets, Brooklyn, N. Y., for students who intend to enter that institution. This course of two years will be useful to students who desire to enter other medical schools. (See special circular.)

**Optics.** A two-year professional course in optometry, leading to a certificate issued by the University, is given by Extension Teaching. The required classes in each year are mentioned in the outline given below. A special circular describing this series and giving full information concerning the entrance requirements may be obtained from the Secretary of the University. Two scholarships covering all tuition fees in optometry are awarded annually by the American Optical Company of Southbridge, Massachusetts, and one by the New York City Optometrical Society. Applications must be filed by May 1.

#### FIRST YEAR

- Optometry A1 Plane geometry (review) and plane trigonometry
- Physics A1-A2 General elementary physics
- Optometry 1-2 Theoretical optics
- Optometry 3-4 General anatomy with special reference to the anatomy and physiology of the eye
- Optometry 6 Practical optics
- Optometry 8 Theoretical optometry



## SECOND YEAR

Optometry 9-10 Theoretical optics  
 Optometry 11-12 Physiological optics  
 Optometry 13-14 Practical optics  
 Optometry 15-16 Theoretical optometry  
 Optometry 17-18 Pathological conditions of the eye  
 Optometry 19-20 Practical optometry

The fee for this certificate is \$10.

**Secretarial Studies.** The Department of Extension Teaching has provided two series of courses for students in secretarial studies.

These courses are planned properly to equip students who desire to become private secretaries, or to hold important positions in offices as assistants to public officials or to persons engaged in professional pursuits.

*One-Year Course for College Graduates*

Graduates of approved colleges who have been accepted as candidates for a certificate are required to complete during the year the following courses:

Stenography e1-2 and Typewriting e1-2, for which academic credit of 8 points will be allowed.

They are also required to select from the courses in business offered by the School of Business or Extension Teaching, electives amounting to 14 points. Among the electives recommended are the following:

Secretarial bookkeeping, Bookkeeping e1-2  
 Elements of accounting, Business 23-24  
 Business organization and administration, Business 7-8  
 Principles of money and banking, Business 51  
 Business law, Business 71-72  
 Typography, Typography e1  
 Public aspects of business, Business 3-4  
 Contracts, Business e73-74  
 Corporate finance, Business 45  
 Economic history of the United States, Business 1-2  
 Economic geography of Europe, Business 89  
 Speaking and writing French, Commercial French b93-94  
 Speaking and writing Spanish, Commercial Spanish b95-96  
 Practical advertising, Business e15  
 Advanced advertising, Business e16  
 Latin-American commercial law, Business e67-68  
 Economic doctrines and social reform, Economics b101-102

The fee for this certificate is \$10.

*Two-Year Course for High School Graduates*

Graduates of approved high schools, fulfilling the requirements for admission as stated in the pamphlet entitled "Secretarial Studies," will be admitted as candidates for a certificate in Extension Teaching. The complete series will demand two years, although this time may be shortened by attendance at Summer Sessions. Students may use the afternoon and evening classes in Extension Teaching.

<i>Courses leading to a Certificate in Secretarial Studies:</i>	<i>Points</i>
Stenography e1-2, Typewriting e1-2, Stenography e9-10, counted as . . . . .	8
English eA1-A2 . . . . .	6
Modern languages . . . . .	12
Secretarial correspondence e1-2 or Business English e1-2 . . . . .	6
Business e7-8 (Business administration) . . . . .	4
Secretarial bookkeeping . . . . .	4
Typography . . . . .	2
Elective . . . . .	6
<b>Total . . . . .</b>	<b>48</b>

The fee for this certificate is \$10.

Students may secure the degree of B.S. in Business by pursuing secretarial studies in the School of Business. See special announcement.

April 15, Friday, is the last day for filing applications for the professional certificate in Secretarial Studies.

**The Institute of Arts and Sciences.** The Institute of Arts and Sciences, established by action of the Trustees of Columbia University on February 3, 1913, is a division of the Department of Extension Teaching. The aim of the Institute is to provide a popular late afternoon and evening program consisting of general lectures and events of a cultural nature.

The program is planned for busy men and women. Its scope includes single lectures and short series of lectures, of not over six, on history, literature, art, music, geography, science, and on current economic and social problems; it comprises also illustrated travel lectures, recitals, dramatic readings, and vocal and instrumental as well as chamber music concerts.

The program is subscribed for as a whole. For annual dues which are merely nominal, see program of Institute of Arts and Sciences.

A member of the Institute is entitled to free admission for himself and one other person to all the lectures and other events on the regular evening program, but in the afternoon only one person is admitted on the ticket. The ticket is transferable. Altogether the membership ticket includes free admission to approximately 250 lectures, readings, concerts, recitals, etc., throughout the season. The program continues from October to April.

The University auditoriums are used. Memberships are accepted at any time and are good for one calendar year from the first of the month nearest the time of enrolment.

A special pamphlet describing in detail the program of the Institute will be mailed upon request.

**Home Study Courses.** Columbia University through the Department of Extension Teaching offers Home Study courses for persons who are unable to attend classes conducted at the University. There are many individuals who, for a variety of reasons, are compelled to postpone their academic work and who are very reluctant to drop it completely. According to the University's policy of providing a liberal education for all who desire it, these courses have been instituted for the benefit of those who wish, even in this limited and restricted manner, to engage in advanced study. A special circular will be sent upon request.

The University, although it does not require previous academic work for admission to Home Study courses, asks each prospective registrant to give satisfactory indications that he or she can pursue further study to advantage, and prospective students are urged to enrol only in those courses for which previous study and training has prepared them and from which they may derive the greatest amount of pleasure and profit.

Home Study courses have no reference to academic credit or degrees. Upon satisfactory completion of the work prescribed by the instructor, a certificate stating that definite work has been completed will be given by the Registrar of the University.

Enrolment in Home Study courses may begin at any time, but the Department reserves the right to limit the number or length of courses for which one individual may enrol.

All courses aim to cover the same ground as those given to resident students, but Home Study is outlined and administered in a way that will enable mature non-resident students to take advantage of their experience which, in the case of resident students, is compensated for by more intensive reading. All instructors are members of the staff of one of the departments of the University and all work is outlined by them and carried out under their supervision and direction.

Instruction will be given in the following subjects:

Astronomy: Navigation; Business: Business organization and administration; Economic geography; Corporation finance; Investment finance; Business law; Personnel management; Elementary business arithmetic; Business mathematics; Economics: Principles of economics, Labor problems, Corporation problems, Railroad problems; English: English composition, Business English, American literature, English literature, Contemporary European literature, The modern drama, The technique of the short story, magazine articles, newspaper writing, dramatic composition; Fine Arts: History of architecture, history of art; French: Elementary courses, courses in composition, reading courses; Government: Federal government of the United States: History: American history, European history, General history; Insurance; Italian: Elementary courses, courses in composition, reading courses; Mathematics: Elementary algebra (algebra to quadratics), Intermediate algebra (quadratics and beyond), Plane geometry, Solid geometry, Trigonometry, College algebra, Analytic geometry, Differential calculus with applications, Integral calculus with applications, Differential equations; Nature and functions of law; Philosophy: History of philosophy, Psychological ethics, The novel elements in modern thought, The insistent problems of today; Problems of labor legislation in the United States; Psychology: Elements of psychology (introductory course), Psychology of advertising and selling, Applications of psychology; Secretarial studies; Sociology: Community organization; Spanish: Elementary courses, courses in composition, reading courses; Statistics. Some of the above are in preparation and others will be announced from time to time.

### Degrees

**Regulations Governing Credit toward the Degrees of A.B. in Columbia College and Barnard College and B.S. in Teachers College.** Students of Columbia College, Barnard College, and Teachers College will be permitted to



attend Extension courses which are approved by the Committees on Instruction and will be allowed to count them toward the degrees of A.B. and B.S. under the following regulations:

1. The election of Extension courses must be approved in advance by the Committees on Instruction.

2. Students will not be allowed to exceed a total of 16 hours in Barnard College, or 16 hours in Teachers College including the hours of Extension courses, save for reasons of weight and by the special permission of the Committees on Instruction.

3. Students desiring these courses to count toward the degrees of A.B. and B.S. must obtain at least a grade of C.

4. Matriculated students electing Extension courses after having obtained the approval of the Committees on Instruction must register for these courses at the office of the Registrar and pay the fees required. Teachers College students taking Extension courses must register for such work at the Registrar's office of Teachers College and pay the fees therefor in Teachers College.

All students who intend to apply for advanced credit in Columbia College for work done in Extension Teaching must have the authorization of the Office of Admissions. In order to obtain such authorization the student should submit his complete previous record. This data should be supplied at the earliest possible moment.

Students who desire credit in Barnard College must make all their arrangements through the Registrar of Barnard College.

**For the Degrees of Master of Arts and Doctor of Philosophy under the Faculties of Political Science, Philosophy, and Pure Science.** The courses in Extension Teaching which have been approved by the Faculties of Political Science, Philosophy, and Pure Science and by the Executive Committee of the University Council may be counted in part fulfilment of the residence requirements for the degrees of Master of Arts and Doctor of Philosophy, subject to the rules governing these degrees as defined in the departmental announcements. These courses are numbered 100 and above and marked Credit II.

The *Announcement of the Faculties of Political Science, Philosophy, and Pure Science*, which will be sent upon application to the Secretary of the University, contains full information with regard to fellowships, scholarships, prizes, student employment, appointments, University and tuition fees, and all other University matters of interest to advanced students. It contains also a statement of the University requirements for the degrees of Master of Arts and Doctor of Philosophy and should be consulted by every candidate for those degrees.

**For the Degree of Master of Science.** The degree of Master of Science is awarded as a graduate professional degree under the Faculty of Applied Science, the Faculty of Practical Arts, the School of Architecture, and the School of Business. For information with regard to candidacy for this degree application should be made to the Dean or Director of the Faculty or School concerned.

**Courses in Teachers College.** Teachers College in its School of Education offers to matriculated students a number of its regular courses at hours in the afternoons and on Saturday mornings which are convenient for teachers. These courses include work in the history and philosophy of education, educational administration and school supervision, educational psychology and measure-



ments, rural education, vocational education, religious education, scouting and recreational leadership, secondary education, elementary education, kindergarten education, and certain courses on the methods of teaching academic subjects. A bulletin describing these afternoon, evening, and Saturday courses may be obtained from the Secretary of Teachers College.

Teachers College offers also in its School of Practical Arts, at similar hours and in the evenings, regular and special classes in foods and cookery, clothing and textiles, household administration, nursing and health, household chemistry, fine arts, music, physical education, industrial arts, drawing, designing, etc. The special classes in the practical arts for Extension students are fully described on pp. 124 following of this bulletin.

**Relation of Extension Teaching to other University Work.** 1. The requirements for the degree of Master of Arts are stated in full in the *Announcement of the Faculties of Political Science, Philosophy, and Pure Science*, which will be sent upon application to the Secretary of the University. This bulletin should be consulted by all students electing graduate courses.

2. Students taking Extension courses who desire to become candidates for the degree of Bachelor of Arts or Bachelor of Science or for professional degrees in Science, Law, Medicine, Business, and Practical Arts, should make application to be received as such to the Director of Admissions, Room 321 University Hall. The requirements for admission to the University as a candidate for baccalaureate degrees are set forth in the bulletin, *Entrance Examinations and Admissions*, 1920-1921, which may be obtained on application to the Secretary of the University.

3. Students taking Extension courses which they desire to have credited in Teachers College toward the degree of Bachelor of Science should consult the Secretary of Teachers College before registration. For full information in reference to the requirements for admission to the School of Education or the School of Practical Arts of Teachers College, apply to the Secretary of Teachers College.

4. Students using Extension courses for the purpose of securing entrance credits should consult Professor Adam Leroy Jones, Room 321 University Hall. For admission to Barnard College, students should consult the Dean of Barnard College before registering.

### Enrolment

Year	Morningside	Extramural	Total
1910-11	922	390	1312
1911-12	1329	271	1600
1912-13	2016	296	2312
1913-14	2664	723	3387
1914-15	3407	754	4161
1915-16	3960	821	4781
1916-17	5328	680	6008
1917-18	5944	713	6657
1918-19	6213	536	6749
1919-20	11492	997	12489

## EXTRAMURAL COURSES IN LOCAL CENTERS

To facilitate the work of inspection away from the University, the Administrative Board may institute local centers. These may be organized by local boards of education, societies and clubs. Such local organizations determine upon the courses after consultation with the Director of Extension Teaching. They enlist local interest, provide by fees or otherwise for the expenses of the courses, and furnish lecture halls and janitorial service. The Administrative Board will establish and conduct local centers when suitable arrangements may be made and sufficient guarantees secured.

Courses of fifteen weekly periods of two academic hours each may be offered in local centers in either the Winter or Spring Session for classes numbering at least twenty-five students. Such courses may be given academic credit on approval of the appropriate authorities at Columbia University. Those desiring to arrange for such courses should communicate with the Director of Extension Teaching, stating the course desired and the number of students of a guaranteed enrollment. The fee for such courses is set at \$16.00 for each student for the fifteen periods.

## COURSES OF INSTRUCTION

**NOTE.** The University reserves to itself the right to withdraw or modify these courses, or to change instructors, as may seem wise.

Courses corresponding and equivalent to prescribed courses of Columbia College are designated by letters A, B. A<sub>1</sub>, B<sub>1</sub> refer to the Winter Session (September-January) in such a course; A<sub>2</sub>, B<sub>2</sub> to the Spring Session (February-May). In numbered courses, odd numbers designate the Winter Session, even numbers the Spring Session.

In the statement of each course the prerequisites are indicated except that the equivalent of the first half of a hyphenated course (*e. g.*, English *ei-2*) is usually assumed to be a prerequisite for admission to the second half.

**Credits.** For courses numbered 100 to 299, inclusive, undergraduate credit will be determined by the various faculties under which the student intends to apply for such recognition. For entrance credits, see pp. 10, 11.

The question of credits for Barnard College, Columbia College, and College of Physicians and Surgeons must be determined finally on consultation with the appropriate Committee on Instruction.

Courses marked Credit I—May be counted toward the degrees of A.B. and B.S., in all parts of the University where these degrees are given, and toward appropriate diplomas in teaching. See pp. 16, 17. For other courses, which under certain conditions may be offered for credit by candidates for the A.B. or B.S. degree, see Credit II.

Courses marked Credit II—May be offered by graduate students toward the higher degrees. Open also to undergraduates on the approval of the appropriate Committee on Instruction obtained in advance.

Courses marked Credit III—Are open only to graduate students and may be offered toward the degrees of A.M. and Ph.D.

Courses marked Credit IV—May be counted for matriculated students in the School of Practical Arts toward the degree of B.S. See p. 124.

Courses marked Credit V—May be counted toward the appropriate degrees in the Schools of Mines, Engineering, and Chemistry, and Architecture.

Courses marked Credit IX—May be counted toward the degree of B.S. in Business.

Only courses thus designated will be counted toward degrees.

The fees and points as stated with the various courses are for each Session. In the case of non-credit courses, the number of points is published merely to give a general idea of the amount of work required of the student.

## AGRICULTURE

Columbia University through the Extension Teaching Department offers courses in agriculture, which will be open to students who desire to take only work in this subject with or without credit. These courses may also, with the

approval of the Committee on Instruction, form part of the curriculum leading to the degree of A.B. for students of Columbia College.

Students desiring to undertake courses in agriculture should before registering consult Professor O. S. Morgan, Room 511 Schermerhorn Hall; office hours 10-11 a. m., Wednesday, Thursday, and Friday, and at other hours by appointment. He will be glad to assist students in arranging their programs, and will outline classes in agriculture to cover partial or complete time of one or more sessions of study. Students who have special objects in view, such as preparing to become farm operators or specialists, should consult him about their programs. The courses have been prepared so as to be of practical assistance to those who desire to improve their farming venture, or who plan to buy a farm but need introductory courses.

The work opens on September 23, but students who do not desire credit may register as late as November 10. All courses are open to students in the Spring Session regardless of attendance in the Winter Session.

**Agricultural and horticultural exhibit**, afternoon and evening, September 24 and 25, Room 308 Schermerhorn.

**Agriculture e1-2—Introduction to agriculture; Field crops.** Lectures and laboratory. Credit I, IV. 3 points each Session. Fee \$24 each Session. Professor O. S. MORGAN

Section 1—9:10-10:50 a. m., Saturday (lectures). Room 505 Schermerhorn; 11 a. m.-12:50 p. m., Saturday (laboratory), Room 502 Schermerhorn

Section 2—7:20-9 p. m., Wednesday (lectures). Room 505 Schermerhorn; 11 a. m.-12:50 p. m., Saturday (laboratory). Room 502 Schermerhorn (Section 2 is offered in the Winter Session only)

The object of this course is to give the student entering the study of agriculture a clear understanding of the main problems and principles of present-day scientific agriculture, particularly as practised in the eastern United States. All students undertaking the study of agriculture for the first time should take at least the Winter Session of this course.

Winter Session: The essentials of crop production as affecting the American cereal crops. Brief consideration will be given the following: crop rotation, fertilizers, manures, liming, varieties, cultural methods, food values, harvesting, storage, farm machinery, seed improvement, testing, and cost production, especially as relates to corn, wheat, and clover culture.

Spring Session: The production of small grains, hay, grass, legumes, potatoes, and roots. The management of hay fields, seeding mixtures, alfalfa, vetches, soy beans, cereals for hay; pastures, seeding and management; the production of potatoes and root crops.

Laboratory work will include the study of the characteristics of farm crops, judging and scoring of corn and other grains, testing for germination and purity, reports on special topics, plot experiments in the greenhouse, and excursions to industrial plants and farms.

**Agriculture e1x-2x—Lectures only, of agriculture e1-2.** 2 points each Session. Fee \$16 each Session. Professor O. S. MORGAN

Section 1—9:10-10:50 a. m., Saturday. Room 505 Schermerhorn

Section 2—7:20-9 p. m., Wednesday. Room 505 Schermerhorn (offered Winter Session only)

**Agriculture e3-4—Soils and fertilizers.** Lectures and laboratory. Credit I, IV. 3 points each Session. Fee \$24 each Session. Professor O. S. MORGAN



Section 1—2:10-3:50 p. m., Thursday (lectures). Room 505 Schermerhorn Laboratory arranged at convenience of students, or 2:10-4 p. m., Friday. Room 505 Schermerhorn, and agricultural greenhouse

Section 2—7:20-9 p. m., Wednesday (lectures). Room 505 Schermerhorn Laboratory arranged at convenience of students or 7:20 p. m., Thursday. Room 505 Schermerhorn, and agricultural greenhouse. (Offered Spring Session only)

The object of this course is to give the novice as well as the practical farm operator a thorough-going understanding of the basis of successful soil management for crop production. The Spring Session of this course should form a part of every "city" farmer's studies in technical agriculture. The laboratory work is essential.

Winter Session: Principal soil types: clearing, draining and fitting land; tillage and tillage practices; organic matter, muck-lands, green manure cropping; lime, liming and acid soils; hillside soil management. Excursions to well-equipped practical farms.

Spring Session: Fertilizers, manures, physical and chemical factors, soils and crop problems in agriculture from the standpoint of soil fertility and productivity; the supply in the form of manure, etc., and the practical economic consideration of maintaining and increasing the crop-producing power of lands. Renovation of run-down farms. Special plant studies on soils and fertilizers in the laboratory for soil analysis. Students are invited to bring soil from garden or farm for analysis. All students entering upon the study of Agriculture should, if possible, take both Sessions of this course.

**Agriculture e3x-4x—Lectures only, of agriculture e3-4.** 2 points each Session. Fee \$16 each Session. Professor O. S. MORGAN

Section 1—2:10-3:50 p. m., Thursday. Room 505 Schermerhorn

Section 2—7:20-9 p. m., Wednesday. Room 505 Schermerhorn (offered Spring Session only)

**Agriculture e7—Commercial grain grading.** Sixteen lectures and thirty-two laboratory periods. Credit I, IV. 3 points Winter Session. Mr. W. B. COMBS.

7:40-8:30 p. m., Tuesday (lectures). Room 505 Schermerhorn; 7:40-9:30 p. m., Thursday, and 2:10-4 p. m., Saturday (laboratory). Room 502 Schermerhorn. Fee \$24.

The object of this course is to teach the application of the Federal grain grades. The lectures will include physical, chemical and biological characteristics of the various types of grain and relation to commercial value; plant diseases of grains; injurious insects; deterioration in storage and transit; discussion of grading factors and explanation of the Federal grain grades.

The laboratory exercises will be devoted to the actual grading of samples of wheat, corn, and oats, and will include: identification of classes and subclasses; analysis for damaged, heat damaged, foreign material and other grading factors; dockage assessment; objectionable odors; smutty, garlicky and off grade grains; chemical tests for sulphured grain; tests for moisture and weight per bushel; complete analysis of samples for grade with frequent examinations in grading.

NOTE. Students planning to take this course should communicate with the department of Agriculture, Columbia University, before registering.

This course may be repeated in the Spring Session.

**Business e41-42—Farm management.** Readings, conferences, reports and excursions. Credit I, IV, IX. 3 points each Session. Professor O. S. MORGAN  
3 p. m., Wednesday, or by appointment. Room 511 Schermerhorn. Fee \$24 each Session

The course is an introduction to agricultural economics. The Winter Session gives a thorough review of the chief problems in American farm management. Topics of study: types of farming, intensive vs. extensive, apportionment of capital in farming, stock, machinery, buildings,

individual farm projects, farm accounts. The Spring Session deals with the chief features of agricultural economics.

NOTE. Where practicable, students registering for Business e41-42, should take Agriculture 21-2 or e11-12 and Business e43-44.

**Business e43-44—Economics of food marketing.** Credit IV, IX. 2 points each Session. Professor A. HOBSON

2:10-3:50 p. m., Wednesday. Room 611 Journalism. Fee \$16 each Session.

This course deals with the fundamental principles involved in the field of market distribution. Special emphasis will be given to the marketing of food products. The work discusses the marketing processes encountered by those products in their journey from the farmer to the consumer. Attention is given to such topics as: grades and standards, storage, transportation, the middleman's services, charges, future trading, price, marketing forces, cooperative organizations, parcel post and express methods, and municipal marketing. Some of the more important of the many proposed marketing reforms will also be discussed.

**Agriculture e11—Tree fruits.** Lectures, laboratory, and field work. 3 points Winter Session. Mr. HUGH FINDLAY

7-8:40 p. m., Monday and Thursday. Room 505 Schermerhorn. Fee \$24

The principles underlying the production of tree, fruits, sites for plantations, soils, tillage, fertilization, propagation, planting, cropping, thinning, pruning, rejuvenating, spraying, harvesting, storing, and the more common insects and diseases of the orchard will be identified and methods of control given.

**Agriculture e12—Orchard and small fruit management.** Lectures and demonstration, also trips to receiving centers and large markets. 2 points Spring Session. Mr. HUGH FINDLAY

7-8:40 p. m., Monday. Fee \$16

A continuation of the previous fruit course. Commercial phases of fruit growing: locations, transportation, labor and fertilizer problems, tools and machinery, planting plans, adaptation of varieties, orchard harvesting, grading, storing and marketing, disposal of low grade fruit, packages, cooperative costs, yields and profits.

**Agriculture e13—Bush fruits, strawberries and grapes.** Lectures, and laboratory. 3 points Winter Session. Mr. HUGH FINDLAY

4:20-6 p. m., Monday and Thursday. Room 409 Avery. Fee \$24

Bush fruits, grapes, and strawberries with considerations similar to those developed in the course on tree fruits, but applied to study of small fruits.

**Agriculture e14—Greenhouse management.** Lectures, laboratory, and trips to commercial and private greenhouses. 3 points Spring Session. Mr. HUGH FINDLAY

7-8:45 p. m., Tuesday (lectures); 4:20-6 p. m., Tuesday (laboratory). Greenhouse. Fee \$24

Consideration of types of greenhouses, material used, cost of construction, equipment; different systems of heating and piping are studied and compared; watering, soil sterilization, fumigation and ventilation. Adaptation of various types of greenhouses to special crops and conditions. Methods of manipulation and culture of various florists' crops, vegetables and fruit under glass.

**Agriculture e15—Floriculture.** Lectures and practical work. 3 points Winter Session. Mr. HUGH FINDLAY

7-8:45 p. m., Tuesday (lectures). Room 409 Avery; 4:20-6 p. m., Tuesday (laboratory). Greenhouse. Fee \$24

Study of bulbs, bedding plants, florists' crops, palms and ferns. Propagation, potting, watering, spraying, fumigation and ventilation, arrangement of flowers and plants to produce decorative effects. Establishment and management of a flower shop.

**Agriculture e16—Vegetable gardening.** Lectures, laboratory practice, and field trips to local truck gardens. 3 points Spring Session. Mr. HUGH FINDLAY

4:30-6:10 p. m., Thursday (lectures); 4:20-6 p. m., Monday (laboratory). Greenhouse. Fee \$24

Preparation of soil and composts; seeding; hot-bed and cold frame construction and management, transplanting, cropping plans; tillage; spraying, harvesting, storage, marketing, disposal of low grade products; farm and market gardening.

**Agriculture e18—Survey of world horticulture.** Illustrated lectures. 1½ points Spring Session. Mr. HUGH FINDLAY

8-8:50 p. m., Thursday. Fee \$12

The horticultural outlook in America; fruits, vegetables and flowers and their introduction to American horticulture. Export and import trade in horticultural products. History of horticultural implements. Horticultural methods and products in the chief countries of the world.

#### *Graduate Courses in Agriculture*

**Business e195-196—American field crops.** Credit II, IX. 3 points each Session. 8 hours laboratory, or equivalent. Conference weekly. Report optional. Professor O. S. MORGAN

Hours to be arranged. Fee \$24 each Session

The course consists of a study of the principles underlying the production and management of cereal and forage crops, and farm management factors related thereto.

Advanced studies of pot, jar, and cylinder soils' work is laboratory option.

Prerequisite: Agriculture e1-2, e3-4, Business e41-42, or their equivalent, and satisfactory preparation in botany and chemistry.

**Business e197-198—Soil management.** Fertilizers, soil amendments, soil toxins as related to plant production. Credit II, IX. 3 points each Session. 8 hours laboratory. Conference weekly. Report required. Professor O. S. MORGAN

Hours to be arranged. Fee \$24 each Session

The work consists of fertilizer and crop tests of soils that have been surveyed. Careful laboratory tests and studies are emphasized, as well as a thorough study of experiment station publications.

Prerequisite: Agriculture e1-2, e3-4, or their equivalent, and satisfactory preparation in botany and chemistry.

#### *Special Courses in Agriculture*

**Agriculture eXa, b, c, d, e—Short lecture courses in agriculture.** Fee, in full, for each course, \$12. No University fee.

Tentative schedule of short courses of sixteen lecture periods as planned for the current year in the following subjects:

Xa—Dairying

Xb—Swine raising

Xc—Poultry raising

Xd—Bee keeping.

Xe—Tractors and farm buildings.



The hours of these courses will not conflict with the hours of the regular classes in agriculture.

Each one of these courses will run through about a month, and will be held in the late afternoon and evening of a day or two days of each week of the course.

The first one of the series will not be offered until December, 1920, before which time a special circular announcement will be available for distribution to inquirers.

## ANTHROPOLOGY

**Anthropology e107-108—Introduction to physical anthropology.** Credit II. 3 points each Session. Dr. B. OETTEKING

Hours to be arranged. Laboratory course. Room 705 Journalism. Fee \$24 each Session.

In this course will be treated the anatomical characteristics of races; the methods of descriptive and metrical study of the skeleton and of the body of the living, with special reference to the morphological significance of variations.

**Anthropology e118—Languages of North America.** Credit II. 3 points Spring Session. Dr. P. E. GODDARD

9-10 a. m., Monday and Friday. Fee \$24

The course will consist of an examination of the vocabulary and the grammatical structure of an Athapaskan language. Comparisons will be made with other North-American languages, both the related Athapaskan ones and those which appear to be of independent origin. The course should provide a fair conception of the character of American languages.

**Anthropology e139—Primitive social organization.** Credit II. 3 points Winter Session. Dr. R. H. LOWIE

7:30-9:30 p. m., Tuesday. Room 707 Journalism. Fee \$24

This course consists of a survey of the most important phenomena of social organization among peoples lacking written records. The topics for discussion include: The family; forms of marriage; kinship usages; terms of relationship; the clan; the position of woman; clubs, age-classes, secret societies; government; the origin of political organization.

Reference will be made to the standard ethnographic monographs.

**Anthropology e140—The culture of the Plains Indians.** Credit II. 3 points Spring Session. Dr. R. H. LOWIE

7:30-9:30 p. m., Tuesday. Fee \$24

This course consists of an intensive consideration of a single region, with special reference to theoretical problems. The topics for discussion include: economic life; industrial activities; art; social organization; social customs; mythological conceptions; religion; ceremonialism; place of the Plains Indian culture in North America generally.

For the study of material and artistic culture the students will be referred to collections in the American Museum of Natural History.

There will be no textbook. Students are expected to have familiarized themselves with Wissler's *North American Indians of the Plains* and will be referred to monographs for research.

**Anthropology e141—Archaeology and ethnology of the southwestern United States.** Credit II. 3 points Winter Session. Dr. P. E. GODDARD

9-10 a. m., Monday and Friday. Room 707 Journalism. Fee \$24

The course will describe the ruins found in the Southwest and will reconstruct as far as possible the life of the pre-Columbian period. The narratives of the Spanish explorers of 1540 will be explained. The life of the living Indians will be discussed with particular relation to their historical past and to their present-day neighbors.



**Anthropology e151—Origin and development of music.** Credit II. 3 points Winter Session. Professor J. B. BECK

4:30–6:10 p. m., Monday. Room 701 Journalism. Fee \$24

This course of lectures will discuss the origin and development of music—the preliterate period previous to the invention of musical notations.

## ARCHITECTURE

The following afternoon and evening courses in architecture, offered in the year 1920–1921, are open to all qualified students without examination. They correspond, in part, to the work given in the School of Architecture, and equivalent courses will count toward the degree of Bachelor of Architecture for those who can present the required credentials for admission to the School of Architecture (see Announcement of the School of Architecture).

A recommended sequence of courses in architecture leading to the Certificate of Proficiency is given in a special bulletin which will be sent upon request. This program should be followed by students beginning the study of architecture, even though they are not candidates for the Certificate, since it presents a logical and orderly system of instruction.

For detailed information in regard to the Certificate course, see special bulletin.

For courses in mathematics and structural mechanics, see pp. 90–93 and 59.

**Architecture e1—Elements of design: orders.** Credit V. 5 points Winter Session. Professor C. A. HARRIMAN and Mr. H. G. MARCEAU

8–9:40 p. m., Tuesday and Friday. Room 408 Avery; Drafting in Room 504 Avery. Fee \$40

The orders, with graphical discussion of the elementary details of intercolumniation and superposition, moldings, balustrades, arcades, doors, windows, pediments, arches, domes and vaults. Renderings of orders and mouldings.

**Architecture e2—Elements of design: applications of orders.** Credit V. 5 points Spring Session. Professor C. A. HARRIMAN and Mr. H. G. MARCEAU

8–9:40 p. m., Tuesday and Friday. Fee \$40

Exercises in applications of elementary architectural forms as given in Course e1 and of shades and shadows as given in Course e5, both of which are prerequisites.

**Architecture e5—Shades and shadows.** Credit V. 4 points Winter Session. Mr. G. M. ALLEN

7–7:50 p. m., Monday, Wednesday, and Friday, Room 408 Avery; Drafting, 8–10:30 p. m., Wednesday, Room 601 Avery. Fee \$32

Accurate and rapid methods for determining the shades and shadows on architectural objects, quick methods of approximation, practical applications.

**Architecture e6—Descriptive geometry.** Credit V. 4 points Spring Session. Mr. G. M. ALLEN or Assistant

7–7:50 p. m., Monday, Wednesday, and Friday. Fee \$32

Rapid and unique methods of solving problems relating to right lines and planes; phenomena of lines and surfaces; tangent planes; intersections and developments.

Will not be given for less than ten students.

**Architecture e6a—Shades and shadows.** Credit V. 4 points Spring Session. Mr. G. M. ALLEN or Assistant

7-7:50 p. m., Monday, Wednesday, and Friday; Drafting, 8-10:30 p. m., Wednesday. Fee \$32

Architecture e5 repeated in Spring Session.

Will not be given for less than ten students.

**Architecture e7—Perspective.** Credit V. 3 points Winter Session. Mr. G. M. ALLEN

8-8:50 p. m., Monday and Wednesday, Room 408 Avery; Drafting, 9-10:30 p. m., Wednesday, Room 601 Avery. Fee \$24

Brief, direct, and accurate methods; the office method, perspective plan method, approximations, the perspective of shadows, reflections, presentations of drawing.

Will not be given for less than ten students.

**Architecture e8—Stereotomy.** Credit V. 2 points Spring Session. Mr. G. M. ALLEN

7-7:50 p. m., Tuesday; Drafting, 8-10:30 p. m., Wednesday. Fee \$16

Building stones, architectural stone coursing, architects' and contractors' drawings of stone-work, practical problems in stone jointing, visits to stone-cutting plants; vaults and intersections of surfaces, developments.

**Architecture e8a—Perspective.** Credit V. 3 points Spring Session. Mr. G. M. ALLEN

8-8:50 p. m., Monday and Wednesday; Drafting, 9-10:30 p. m., Wednesday. Fee \$24

Architecture e7 repeated in the Spring Session.

**Architecture e11—Mechanical equipment of buildings.** Credit V. 4 points Winter Session. Mr. H. V. WALSH

9-9:50 p. m., Monday and Friday. Room 403 Avery. Fee \$32

The principles, specifications and design of the mechanical equipment necessary in modern buildings, including plumbing and sanitation, heating and ventilating, electrical equipment, auxiliary fire apparatus, elevators, mechanical refrigeration systems, cleaning apparatus.

Will not be given for less than ten students.

**Architecture e15-16—Building materials and construction.** Credit V. 4 points each Session. Mr. H. V. WALSH or assistant

8-8:50 p. m., Monday and Friday. Room 403 Avery. Fee \$32 each Session

Problems in construction, involving the preparation of complete sets of working drawings and specifications. A detailed study of building materials; timber, stones, bricks, terra-cotta, cementing materials, steel, etc., and their application to frame, ordinary, mill and fire-proof construction.

**Architecture e17-18—Architectural engineering.** Credit V. 3 points each Session. Mr. H. V. WALSH

7-7:50 p. m., Monday and Friday. Room 403 Avery. Fee \$24 each Session

Steel construction. The design of beams, girders, and columns, and by graphical analysis of roof trusses, piers, arches, and retaining walls.

**Architecture e21-22—History of ancient architecture.** Credit IV, V. 2 points each Session. Mr. W. B. DINSMOOR

6-6:50 p. m., Tuesday and Thursday. Room 408 Avery. Fee \$16 each Session

Ancient architecture of Egypt, Assyria, Persia, Judea, Greece, and Rome; historical analysis and critical discussion.

**[Architecture e23-24—History of medieval and Oriental architecture.** Will not be given in 1920-1921; will be given in 1921-1922.]

**Architecture e25-26—Renaissance and modern architecture.** Credit V. 2 points each Session. Mr. W. B. DINSMOOR

7-7:50 p. m., Tuesday and Thursday. Room 407 Avery. Fee \$16 each Session

Architecture of the Renaissance in Italy, France, Germany, Spain, the Low Countries, and England; architecture of the nineteenth century in Europe; American architecture; modern and contemporary development.

**Architecture e31-32—Ancient ornament.** Credit I, V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Friday. Room 407 Avery. Fee \$16 each Session

General classifications; origins, primitive and savage ornament; the historic ornament of Egypt, Assyria, Persia, Greece, and Rome, including Ægean, Cypriote, Phoenician, and Etruscan ornament; the development of the styles, the common motives and patterns of both architectural ornament and the minor arts. Periodic drawings.

**[Architecture e33-34—Medieval ornament.**

Will not be given in 1920-1921; will be offered in 1921-1922.]

**Architecture e35-36—Modern ornament.** Credit V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Monday. Room 407 Avery. Fee \$16 each Session

Ornament of the Renaissance in Italy, France, Germany, Spain, the Netherlands, and England; American colonial ornament; developments of the nineteenth century in Europe and America; modern phases and tendencies.

**Architecture e41-42—Decorative arts and interiors.** Credit V. 2 points each Session. Mr. J. LAUBER

5:10-6 p. m., Monday and Friday. Room 408 Avery. Fee \$16 each Session

A detailed treatment of the processes involved in the following arts and their application to interior design: mosaic, mural painting, architectural sculpture, ceramics, stained glass, plaster, metal and wood-work, followed by an analysis of the abstract principles controlling decorative composition and practical methods of obtaining decorative results.

**Architecture e51—Principles of planning.** Credit V. 2 points Winter Session. Professor W. A. BORING and Mr. H. W. CORBETT

7-7:50 p. m., Wednesday. Room 407 Avery. Fee \$16

Elements and principles of plan grouping, composition of plans, sites, and surroundings analyzed, and application to problems explained. Characteristic classes of modern buildings studied in detail. Sketches and exercises in plan indication.

**Architecture e52—Principles of composition.** Credit V. 2 points Spring Session. Professor W. A. BORING and Mr. H. W. CORBETT

7-7:50 p. m., Wednesday. Fee \$16

Elements analyzed and described. Composition of elevation and sections, typical motives and specific types of buildings, with regard to expression, mass, profile, proportion, voids and solids, texture and color.

**Architecture e71—Drawing, pencil.** Credit V. 2 points Winter Session. Professor C. A. HARRIMAN and Mr. H. G. MARCEAU

8-9:40 p. m., Monday and Thursday. Room 504 Avery. Fee \$16

Outline drawing from the flat, from casts, isometric and pencil shading.



**Architecture e72—Drawing, water color.** Credit V. 2 points Spring Session. Mr. J. LAUBER

1:10-4:30 p. m., Saturday. Fee \$16

For architects, architectural draftsmen and students in allied arts. Outdoor work will be given when the weather permits.

Prerequisites: Architecture e71 or equivalent.

Will not be given for less than ten students.

**Architecture e72a—Drawing, charcoal.** Credit V. 2 points Spring Session. Professor C. A. HARRIMAN

8-9:40 p. m., Monday and Thursday. Fee \$16

From flat, casts, architectural details, ornament.

Prerequisites: Architecture e71 or equivalent.

**Architecture e74—Drawing, water color, advanced.** Credit V. 2 points Spring Session. Mr. J. LAUBER

1:10-4:30 p. m., Saturday. Fee \$16

For architects, architectural draftsmen and students in allied arts. Outdoor work will be given as soon as weather permits.

Prerequisites: Architecture e72 or equivalent.

Will not be given for less than ten students.

**Architecture e75—Drawing, charcoal and life.** Credit V. 2 points Winter Session. Mr. J. LAUBER

8-9:40 p. m., Monday and Friday. Rooms 502 and 701 Avery. Fee \$16

A foundation for drawing from life by careful studies from the antique figure. As soon as the student has acquired the necessary ability, he will be permitted to take the work from the living model.

Prerequisites: Architecture e71 and 73 or equivalent. Not limited to architectural students.

**Architecture e76—Drawing, pen and ink.** Credit V. 2 points Spring Session. Professor C. A. HARRIMAN

8-8:40 p. m., Monday and Thursday. Fee \$16

Pen and ink rendering from examples to acquire technique. Free renderings from photographs, objects and architectural problems.

Prerequisites: Architecture e71 and 72 or equivalent.

**Architecture e77-78—Life drawing and composition.** Credit V. 2 points each Session. Mr. J. LAUBER

8-9:40 p. m., Monday and Friday. Room 701 Avery. Fee \$16 each Session

Study from the nude figure is considered an essential, not only for the student of painting, but for the architect, modeler, and designer as well.

Prerequisite: Architecture e76 or its equivalent.

Will not be given for less than ten students. Not limited to architectural students.

**Architecture e80—Drawing, pencil.** Credit V. 2 points Spring Session. Professor C. A. HARRIMAN and Mr. H. G. MARCEAU

8-9:40 p. m., Monday and Thursday. Fee \$16

Architecture e71 repeated in Spring Session.



**Architecture e82—Modeling.** Credit V. 2 points Spring Session. Mr. J. C. GREGORY

2-5:20 p. m., Saturday. Fee \$16

The purpose of this course is to train the student in the preception of form in the round, and to acquaint him with the technique of modeling.

Will not be given for less than ten students.

### ARCHITECTURAL DESIGN

The courses in architectural design are conducted on the basis of a progressive series of problems and sketches. These are assigned in the form of programs issued at stated intervals. The work of the students, delivered at a designated time, is passed upon by a jury of architects, the whole program being in this respect identical with that of the Beaux-Arts Institute of Design. A registration fee of two dollars is required by the Institute, and this must be paid to the Chairman of the Committee on Education, 126 East 75th Street, New York City. More detailed information on this head will be found in a special folder to be obtained in Room 405 Avery Hall.

**Tuition Fees for Design.** The tuition fee in design, regardless of course, is \$32 per Session.

*Tuition fees are under no conditions returnable even though the full Session's work is not taken.*

Students are advanced in accordance with the regulations of the Beaux-Arts Institute of Design on the basis of values obtained.

NOTE. The full fee covers registration for regular problems of the Beaux-Arts Society. No additional fee is required for ten-hour sketches or for archæology or measured drawing problems. Upon *previous application* to Mr. H. V. Walsh, 405 Avery Hall, qualified students may also be admitted without additional fee to other problem competitions conducted by the School of Architecture.

Sketches and problems will be accepted only after tuition fees have been paid as indicated above.

**Prerequisites for all courses.** Work in the elements of design and shades and shadows, corresponding respectively to Architecture e1, e2, and e5, or their equivalents, such equivalents to be determined **before registration!** Those who wish subsequently to transfer their credits to the records of the School of Architecture must also submit Descriptive geometry, Architecture e6, or its equivalent.

Students may consult Mr. H. V. WALSH in the Winter Session during the week of registration, beginning Wednesday, September 15, and in the Spring Session, beginning Thursday, January 27, respectively, from 7 to 9 p. m., in Room 405 Avery Hall.

**Architecture e61—Elementary design.** Credit V.\* 20 hours. Professor W. A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT, and A. E. FLANAGAN  
Fee, see above

Major and minor problems corresponding to the Class B Analytique Problems of the Beaux-Arts Institute of Design.

\*Students desiring credit for this course in the School of Architecture must submit a complete set of drawings done in Extension Teaching up to the time of the application for transference of credit and bearing the attestation of the instructor in charge. Requests for such transference of credit should be made to Mr. H. V. Walsh, Secretary, School of Architecture, or left in writing for him at the office of the Director of Extension Teaching. The difference in tuition fees must be paid.

**Architecture e62—Intermediate design.** Credit V.\* 20 hours. Professor W. A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT, and A. E. FLANAGAN  
 Fee, see above

Major and minor problems corresponding to the Class B Problems (Projets) of the Beaux-Arts Institute of Design.

**Architecture e62a—Elementary design.** Credit V.\* 20 hours. Professor W. A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT, and A. E. FLANAGAN  
 Fee, see above

Major and minor problems corresponding to the Class B Elements (Analytiques) Problems of the Beaux-Arts Institute of Design.

Equivalent to e61, and taken only by students beginning design in the Spring Session.

**Architecture e63—Intermediate design.** Credit V.\* 20 hours. Messrs. M. PRÉVOT, and H. W. CORBETT  
 Fee, see above

Major and minor problems corresponding to the Class B Problems (Projets) of the Beaux-Arts Institute of Design.

**Architecture e64—Advanced design.** Credit V.\* 20 hours. Professor W. A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT, and A. E. FLANAGAN  
 Fee, see above

Major and minor problems corresponding to the Class A Problems (Projets) of the Beaux-Arts Institute of Design.

**Architecture e65—Advanced design.** Credit V.\* 20 hours. Messrs. M. PRÉVOT and H. W. CORBETT  
 Fee, see above

Major and minor problems corresponding to the Class A problems (Projets) of the Beaux-Arts Institute of Design.

**Architecture e66—Advanced design.** Credit V.\* 20 hours. Messrs. M. PRÉVOT and H. W. CORBETT  
 Fee, see above

Major and minor problems corresponding to the Class A Problems (Projets) of the Beaux-Arts Institute of Design.

**Architecture e67-68—Thesis.** Credit V. 4 points each Session. Professor W. A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT, and A. E. FLANAGAN  
 Fee \$32 each Session

An important final problem in design. Individual instructions will be issued to those qualified.

The attention of students is also called to Greek 149, p. 82

### ARMENIAN (See Slavonic, p. 114)

\* Students desiring credit for this course in the School of Architecture must submit a complete set of drawings done in Extension Teaching up to the time of the application for transference of credit and bearing the attestation of the instructor in charge. Requests for such transference of credit should be made to Mr. H. V. Walsh, Secretary, School of Architecture, or left in writing for him at the office of the Director of Extension Teaching. The difference in tuition fees must be paid.

## ASTRONOMY

**Astronomy e1—Introduction to the science.** Credit I, IV. 2 points  
Winter Session. Dr. C. S. BRAININ

7:10-9 p. m., Friday. Wilde Observatory. Fee \$16

This course consists of a non-mathematical explanation of the simpler phenomena under everyday observation in the heavens. Among the topics considered are: The constellations and aids to the naked-eye recognition of the stars; the subjects of time and navigation; the earth and moon, their relation to each other and to the solar system and the universe; the sun, its spots and prominences; the planets, individually and as members of the solar system; the question of their habitability; eclipses, comets, and meteors; the stars, their motions and compositions; the nebulae and their relation to cosmic hypotheses.

Frequent use will be made of the equatorial telescope and other instruments of the observatory as well as of the Department's large collection of lantern slides.

Text-book: Jacoby's *Astronomy*.

**Astronomy e2—Introduction to the science.** Credit I. 2 points Spring Session. Dr. C. S. BRAININ

7:10-9 p. m., Friday. Fee \$16

Astronomy e1 repeated in the Spring Session.

**Astronomy e3—Navigation and piloting.** 2 points Winter Session. Captain D. POLOWE

7:10-9 p. m., Tuesday. Room 304 Fayerweather. Fee \$16

This course is especially designed to meet the examination requirements of the United States Steamboat Inspection Service as specified in Ocean and Coastwise General Rules and Regulations (Rule V, Sections 29 and 33), which read as follows:

"Any person who has attained the age of nineteen years and who has graduated from a regularly established high school or college may, upon the recommendation of the master or masters under whom he has served, be examined for third mate of ocean or coastwise steamers after having served not less than twelve months (as junior officer) in the deck department of ocean or coastwise steamers of 2,000 gross tons or over." (Sec. 4440, R. S.)

The Department of Astronomy will endeavor to secure junior officers' berths for those students who successfully complete the course and who are desirous of going to sea.

Textbook: Jacoby's *Navigation*.

**Astronomy e4—Navigation and piloting.** 2 points Spring Session. Captain D. POLOWE

7:10-9 p. m., Tuesday. Fee \$16

Astronomy e3 repeated in the Spring Session.

**BOHEMIAN (See Czech, pp. 113, 114)**

## BOOKKEEPING

**Bookkeeping e1—Secretarial bookkeeping.** 4 points Winter Session. Fee \$32. Mr. C. C. HUGHES

Section 1—4:30-6:10 p. m., Wednesday, and 9-10:40 a. m., Saturday. Room 511 Journalism

Section 2—4:30-6:10 p. m., Monday and Friday. Room 503 Journalism

A knowledge of bookkeeping is not required. The purpose of the course is to prepare students to keep the books of the professional man, and also to interpret the accounts of a modern business. From the study of a few simple accounts the work will proceed to a drill in double entry as applied to a trading concern. Some of the special features of the course will include the preparation of various business forms, statements, and reports; construction of family budgets



and household accounts; club and society accounts; lawyers' accounts; physicians' accounts; the private ledger and its relation to the general ledger; controlling accounts; the bank account and bank reconcilements; general classification of accounts.

Complete in one Session.

**Bookkeeping e2—Secretarial bookkeeping.** 4 points Spring Session. Fee \$32. Mr. C. C. HUGHES

Section 1—4:30-6:10 p. m., Wednesday, and 9-10:40 a. m., Saturday

Section 2—4:30-6:10 p. m., Monday and Friday

This course is the same as Bookkeeping e1 given in the Spring Session.

## BOTANY

**Botany e1-2—Nature and development of plants.** Lectures and laboratory. Credit I, IV. 4 points each Session. Professor C. C. CURTIS

4:30-5:30 p. m., Monday and Thursday (lectures). Room 505 Schermerhorn;  
5:30-7 p. m., Monday and Thursday (laboratory). Room 502 Shermerhorn.  
Fee \$32 each Session.

Organs, structure, and work of the plant; development of plant life through an examination of the important biologic types. This course is recommended for pre-medical students, to supplement Zoology e1a-2a; the two courses constitute one year of biology required by law for students intending to study medicine.

## BUSINESS

### *Undergraduate Courses*

It should be noted that courses in which Credit IX does not appear, do not ordinarily count for credit toward the degree of Bachelor of Science in Business.

**Business e7-8—Business organization and administration.** 2 points each Session. Fee \$16 each Session. Professors R. M. HAIG, F. C. MILLS, H. S. PERSON, Messrs. A. PACE, A. H. STOCKDER and G. M. STEPHENS

Section 1—4:30-6:10 p. m., Thursday. Room 507 Journalism

Section 1 is open only to candidates for the secretarial certificate.

Section 2—4:30-6:10 p. m., Thursday. Room 603 Journalism

Section 3—7:40-9:30 p. m., Monday. Room 602 Hamilton

Section 4—7:40-9:30 p. m., Monday. Room 502 Hamilton

Section 5—7:40-9:30 p. m., Tuesday. Room 602 Hamilton

Section 6—7:40-9:30 p. m., Tuesday. Room 502 Hamilton

Section 6 is assigned to those students especially interested in Scientific Management, and will be conducted by Professor PERSON.

Section 7—7:40-9:30 p. m., Wednesday. Room 512 Journalism

Section 8—7:40-9:30 p. m., Wednesday. Room 602 Hamilton

A brief survey of the development of business enterprise. A comparison of the individual proprietorship, the partnership, and the corporation. The structure and organization of corporations; where to incorporate; the charter; organization meetings; selection of officers; proxies; voting trusts; standing committees, etc. General principles of business organization and administration. Factors influencing location and construction of plants. Purchasing and receiving; stores and perpetual inventories. Problems of employment and welfare work. Production routine; special wage systems; 'scientific' management and 'efficiency' movement; marketing and sales organization; advertising; credits and collections; traffic; office organizations; graphic records, etc.

The course is designed as a general survey of modern business procedure.



**Business e7a-8a—Business organization and administration.** 2 points each Session. Mr. A. H. STOCKDER

7:40-9:30 p. m., Thursday. Room 402 Engineering. Fee \$16 each Session.

The subject matter is the same as in Business e7-8, but the course begins in the Spring Session.

**Business e10.—Problems of retail merchandising.** Credit IX. 2 points Spring Session. Mr. J. B. SWINNEY

7:40-9:30 p. m., Thursday. Fee \$16

This course is intended to outline the chief current problems, the difficulties involved in their solution, the various plans being tried and the progress being obtained. It will consist of lectures together with assigned readings in trade papers and reports. Frequently prominent retailers interested in the various problems will take part in the discussion.

The topics will consist of such as the following: standardization of nomenclature in retailing; can modern industrial organization be applied to retail trading concerns; efficient store layout; the place of planning in merchandising; the determination of proper price lines; the balancing of mark-up, turn-over and volume; wage-systems; allocation and proration of overhead; should there be a sales manager; research in retail merchandising.

**Business e11-12—Economic geography.** 2 points each Session. Fee \$16 each Session. Messrs. J. E. ORCHARD and A. H. STOCKDER

Section 1—4:30-6:10 p. m., Monday. Room 507 Journalism.

Section 2—7:40-9:30 p. m., Monday. Room 517 Hamilton

An introductory but non-technical course designed as part of a liberal education. Lays the foundation for further study of economic geography; explains some environmental factors that influence man's economic and social development.

**Business e13-14—Advertising display.** 2 points each Session. Mr. W. P. LANGREICH

7:40-9:30 p. m., Monday. Room 507 Journalism. Fee \$16 each Session

This is a practice course in advertising layouts, supplemented by lectures on the attention-value of display and arrangement as applied to advertising. It deals principally with methods of reflecting the advertising idea pictorially and adjusting it to the nature of the goods advertised and the treatment of the text-matter of the advertisement. Students are given assignments designed to enable them to link together the sales, advertising, and merchandise value of the advertisement.

Given in conjunction with the courses in commercial art and practical and advanced advertising.

**Business e13b-14b—Commercial art.** 2 points each Session. Mr. H. F. LEMCKE

7:40-9:30 p. m., Friday. Room 404 Engineering. Fee \$16 each Session

Instruction in composition in line, mass, color, and in use of different mediums used in producing commercial art.

Prerequisite: Drawing eWI.

**Business e14a—Advertising display.** 2 points Spring Session. Mr. W. P. LANGREICH

7:40-9:30 p. m., Thursday. Fee \$16

Business e13 repeated in the Spring Session.

**Business e15—Practical advertising.** 2 points Winter Session. Mr. W. SHAW-THOMSON

7:40-9:30 p. m., Tuesday. Room 306 Mines. Fee \$16

This course deals with the theory, technique and practice of advertising from the point of view of the planner and writer of advertising copy. A part of the work consists in the study of merchandise as advertising subject-matter. The course consists of lectures supplemented by weekly practice assignments in the writing of copy.

**Business e15a—Advanced advertising.** 2 points Winter Session. Mr. W. SHAW-THOMSON

5:50-7:30 p. m., Tuesday. Room 502 Hamilton. Fee \$16

Identical with Business e16, but offered in the Winter Session.

**Business e16—Advanced advertising.** 2 points Spring Session. Mr. W. SHAW-THOMSON.

7:40-9:30 p. m., Tuesday. Fee \$16

Advertising viewed as a factor in building business for a prescribed commodity. The course deals primarily with details of campaigns, plans, costs, methods, media and problems in circulation.

This course is a continuation of Business e15.

Prerequisite: Business e15 or equivalent.

**Business e16a—Practical advertising.** 2 points Spring Session. Mr. W. SHAW-THOMSON

5:50-7:30 p. m., Tuesday. Fee \$16

Identical with Business e15, but offered in the Spring Session.

**Business e17—Salesmanship.** 2 points Winter Session. Mr. C. V. DAVENPORT

7:40-9:30 p. m., Thursday. Room 307 Philosophy. Fee \$16

Selling and the essentials of salesmanship are considered in this course. The student is given a grounding in the principles of selling and practice in the presentation of a selling proposition from its inception in the customer's mind throughout its development and final consummation as a sale.

The distinct forms of sales are illustrated with typical problems in selling at retail, wholesale, the marketing of specialties and problems in promotion. The student is familiarized with the essential features in the linking of sales and advertising campaigns in the creation and development of business backgrounds.

The ultimate aim of this course and of Business e15 is to fit the student to analyze market problems and to apply to them the proper principles and methods of advertising and selling.

**Business e18a—Salesmanship.** 2 points Spring Session. Mr. C. V. DAVENPORT

7:40-9:30 p. m., Thursday. Fee \$16

Business e17 repeated in the Spring Session.

**Business e19-20—Sales promotion.** 3 points each Session. Mr. R. A. LOUGHNEY

7:40-9:30 p. m., Friday. Room 511 Hamilton. Fee \$24 each Session

Sales promotion is a course that covers that field which lies between advertising and salesmanship. It deals primarily with the effort to cut down sales resistance, increase good-will and organization morale. The course covers sales promotion from all angles, starting with an analysis of the application of sales promotion to any particular business, and going through the various stages, including a discussion on the internal organization necessary to carry it on efficiently.

**Business e21-22—Principles of advertising.** 2 points each Session. Fee \$16 each Session. Mr. A. PACE

Section 1—4:30-6:10 p. m., Tuesday. Room 616 Hamilton

Section 2—7:40-9:30 p. m., Monday. Room 516 Hamilton

A basic course in the functions, theory, principles and applications of advertising, designed to show what advertising is, what functions it economically can perform, the principles which underlie its application to the different fields of business, its relationship to production, distribution, selling, etc., the standards of advertising practice, advertising formulæ, and the organization and management of an advertising department.

This course is designed to provide a general grasp of advertising for the business executive as well as a foundation for the advertising specialist.

**Business e23-24—First year accounting.** 2 points each Session. Fee \$16 each Session. Messrs. F. P. BALTZ, E. M. BARBER, R. T. BICKELL, R. T. GREEN, J. T. HORNER, C. L. MARVIN, E. L. OUTWIN, A. RUSSMAN, F. W. SCHOLZ, E. W. STANTON

Section 1—5:50-7:30 p. m., Monday. Room 713 Journalism

Section 2—7:40-9:30 p. m., Monday. Room 511 Journalism

Section 3—7:40-9:30 p. m., Monday. Room 713 Journalism

Section 4—4:30-6:10 p. m., Tuesday. Room 511 Journalism

Section 5—5:50-7:30 p. m., Tuesday. Room 712 Journalism

Section 6—7:40-9:30 p. m., Tuesday. Room 511 Journalism

Section 7—5:50-7:30 p. m., Wednesday. Room 712 Journalism

Section 8—7:40-9:30 p. m., Wednesday. Room 712 Journalism

Section 9—5:50-7:30 p. m., Thursday. Room 713 Journalism

Section 10—7:40-9:30 p. m., Thursday. Room 511 Journalism

Section 11—5:50-7:30 p. m., Friday. Room 713 Journalism

Section 12—7:40-9:30 p. m., Friday. Room 511 Journalism

Section 13—2:10-4:00 p. m., Saturday. Room 713 Journalism

This course develops the subject rapidly, devoting its time and emphasis to the foundational problems of accounting. It is built up along the lines and methods of modern accounting practice. The subject matter includes: theories of debit and credit; classification of accounts underlying principles of the various accounting records; business papers and documents used as the basis for first entry; simple problems of the balance sheet and income statement; single entry; controlling accounts; handling sales and purchases; safeguarding the cash; consignments; and related topics. Ample practice for students is provided. It is prerequisite to all the other courses in accounting.

(See statement concerning semester examinations, page 8.)

**Business e23a—First year accounting.** 2 points Winter Session. Fee \$16. Messrs. E. M. BARBER, C. C. HUGHES, and J. O. OSGOOD

Section 1—7:40-9:30 p. m., Tuesday. Room 402 Journalism

Section 2—5:50-7:30 p. m., Wednesday. Room 713 Journalism

Section 3—5:50-7:30 p. m., Thursday. Room 402 Journalism

Identical with Business e24, but offered in the Winter Session for the benefit of those who have had Business e23.

(See statement concerning semester examinations, page 8.)

**Business e24a—First year accounting.** 2 points Spring Session. Fee \$16. Messrs. E. M. BARBER, C. C. HUGHES, J. O. OSGOOD, F. W. SCHOLZ, and E. W. STANTON



Section 1—5:50-7:30 p. m., Monday.

Section 2—7:40-9:30 p. m., Monday.

Section 3—7:40-9:30 p. m., Tuesday.

Section 4—5:50-7:30 p. m., Wednesday.

Section 5—5:50-7:30 p. m., Thursday.

Section 6—7:40-9:30 p. m., Friday.

Identical with Business e23, but offered in the Spring Session for those beginning the study of accounting.

(See statement concerning semester examinations, page 8.)

**Business e25-26—Second year accounting.** 2 points each Session. Fee \$16 each Session. Messrs. W. B. COKELL, S. B. KOOPMAN, C. M. NEUBAUER, and T. L. WOOLHOUSE

Section 1—5:50-7:30 p. m., Monday. Room 712 Journalism

Section 2—7:40-9:30 p. m., Monday. Room 712 Journalism

Section 3—7:40-9:30 p. m., Tuesday. Room 712 Journalism

Section 4—5:50-7:30 p. m., Wednesday. Room 402 Journalism

Section 5—7:40-9:30 p. m., Thursday. Room 402 Journalism

A thorough study of the corporation and its related problems is the chief aim of the first half of the course. Some of the topics covered are: records and accounts peculiar to a corporation; elements of manufacturing accounts; perpetual inventory; voucher system and payroll methods; theories of the balance sheet; its make-up, form and arrangement; valuation of assets in the balance sheet; depreciation; showing of liabilities; valuation of capital stock; profits; dividends; reserves and surplus; sinking and other funds; income summary and problems connected therewith; liquidation of a corporation; consolidations and mergers; branch house accounting; fire loss adjustments; hypothecation of accounts receivable; etc.

Practice work for the Winter Session will consist of data in corporation manufacturing accounting for record in blanks and of correlated problems.

The work of the Spring Session will consist of carefully classified and graded problems, supplemented by lectures and demonstrations.

Prerequisite: Business e23-24.

(See statement concerning semester examinations, page 8.)

**Business e25a—Second year accounting.** Credit IX. 2 points Winter Session. Mr. J. T. HORNER

7:40-9:30 p. m., Wednesday. Room 713 Journalism. Fee \$16

Identical with Business e26, but offered in the Winter Session.

Prerequisite: Business e25.

(See statement concerning semester examinations, page 8.)

**Business e26a—Second year accounting.** Credit IX. 2 points Spring Session. Fee \$16. Messrs. J. T. HORNER

Section 1—5:50-7:30 p. m., Thursday.

Section 2—7:40-9:30 p. m., Friday.

Identical with Business e25, but offered in the Spring Session.

Prerequisite: Business e23-24.

(See statement concerning semester examinations, page 8.)

**Business e27-28—Cost accounting.** 2 points each Session. Fee \$16 each Session. Messrs. L. F. BRUMM, C. A. HOWARD, H. C. MCCLUSKEY, and J. F. D. ROHRBACH

Section 1—7:40-9:30 p. m., Monday. Room 402 Journalism

Section 2—5:50-7:30 p. m., Tuesday. Room 713 Journalism



Section 3—7:40-9:30 p. m., Wednesday. Room 511 Journalism.

Section 4—7:40-9:50 p. m., Friday. Room 713 Journalism

The work of the Winter Session will consist of: Elements of costs; principles and general methods of cost finding; direct and indirect costs; direct and indirect expenses; wage systems; recording material and labor costs; compiling the cost data; control of cost records by financial books.

The work of the Spring Session will consist of: Examination of plants; devising of cost systems; estimating of cost systems; departmental cost systems; special order systems according to productive labor and machine cost plans; productive systems according to productive labor and machine cost plans.

Should be taken as a parallel course with Business e25-26.

Prerequisite: Business e23-24.

**For other courses in accounting, see pp. 45-47.**

**Business e31-32—Principles of personnel management.** Credit IX. 2 points each Session. Mr. L. OUTHWAITE

2:10-4 p. m., Tuesday. Room 512 Journalism. Fee \$16 each Session

This course is intended for persons expecting to enter the field of business management. It is designed to furnish them with a knowledge of the best practices and with standards for judging personnel departments and personnel executives, as well as with an understanding of the business executive's responsibility in personnel.

Winter Session—The place of personnel administration in business organization; organization and functions of typical personnel departments; the analysis of jobs and writing of personnel specifications; the use of exact methods in selection and placement (intelligence and trade tests, rating methods, physical examination); training methods including manuals of operation; transfer, promotion and discharge.

Spring Session—Wages and payment methods; employee representation and labor organization; research problems in personnel work (calculation of labor turnover, the labor audit); relation of personnel department to the other departments of management; relation of personnel department to the community.

**Business e41-42—Farm management.** Readings, conferences, reports and excursions. Credit I, IV, IX. 3 points each Session. Professor O. S. MORGAN  
3 p. m., Wednesday, or by appointment. Room 511 Schermerhorn. Fee \$24 each Session

The course is an introduction to agricultural economics. The Winter Session gives a thorough review of the chief problems in American farm management. Topics of study: types of farming, intensive *vs.* extensive, apportionment of capital in farming, stock, machinery buildings, individual farm projects, farm accounts. The Spring Session deals with the chief features of agricultural economics.

NOTE. Where practicable, students registering for Business e41-42 should take Agriculture e1-2 or e11-12, and Business e43-44.

**Business e43-44—Economics of food marketing.** Credit IV, IX. 2 points each Session. Professor A. HOBSON

2:10-3:50 p. m., Wednesday, Room 611 Journalism. Fee \$16 each Session.

This course deals with the fundamental principles involved in the field of market distribution. Special emphasis will be given to the marketing of food products. The work discusses the marketing processes encountered by those products in their journey from the farmer to the consumer. Attention is given to such topics as: grades and standards, storage, transportation, the middleman's services, charges, future trading, price, marketing forces, cooperative organizations parcel post and express methods, and municipal marketing. Some of the more important of the many proposed marketing reforms will also be discussed.

**Business e45—Corporation finance.** 2 points Winter Session. Fee \$16.

Professor H. LYON and Mr. J. C. BONBRIGHT

Section 1—7:40-9:30 p. m., Wednesday. Room 702 Hamilton

Section 2—5-50-7:30 p. m., Thursday. Room 511 Journalism

This course will follow the syllabus of the Investment Bankers Association and will present the variations of risk and income and control a corporation effects through the issuance of its securities; principles governing the issuance and proportions of classes of securities of a corporation, or the plan of capitalization, financial situations which lead to the issuance of particular forms of securities, the organization of subsidiaries, assumed bonds and guaranteed securities; leases; securities issued for mergers, combinations and consolidations; amortization of debt; the preparation of securities with relation to the market.

**Business e46—Corporation finance.** 2 points Spring Session. Fee \$16.

Professor H. LYON and M. J. C. BONBRIGHT

Section 1—7:40-9:30 p. m., Monday

Section 2—7:40-9:30 p. m., Thursday

This course will follow the syllabus of the Investment Bankers Association with the addition of a brief discussion of the mechanism of the stock exchange. Though the student should preferably take Business e45 before taking this course, he may, by doing some extra reading, take this course without having had Business e45. The course will discuss the finding of funds for the capital account; financing through an appeal to the stockholders and stockholders' rights; work and methods of the banking houses in financing corporations and inducing capitalists to commit funds to the enterprise; making a 'market'; syndicate transactions, joint accounts and underwritings; management of incomes; financing of receiverships, readjustments of the capital account and reorganizations. Stock exchange transactions.

**Business e47—Investment finance.** Credit IX. 2 points Winter Session.

Dr. F. A. DEWEY

7:40-9:30 p. m., Tuesday. Room 512 Journalism. Fee \$16

It is the purpose of this course and Business e48 to cover the field of investment in a broad general way and be helpful in indicating means and methods of investing. This course includes the mechanism, types and tests of investment; public and private securities; investment markets; government and municipal bonds, mortgages, corporation securities; financial news and sources of information.

NOTE. Students who have had or are taking Business 45-46 will be allowed only half credit for this course. No credit will be allowed to students who have had or are taking Business 147-148.

**Business e48—Investment finance.** Credit IX. 2 points Spring Session.

Dr. F. A. DEWEY

7:40-9:30 p. m., Tuesday. Fee \$16

Corporation securities with enough of the mechanism of corporation finance for investment analysis; mortgage bonds, collateral securities, debentures and stock as investments; investment institutions; general investment principles, distribution of risk, etc.; speculation and investment; the mechanism of the stock exchange and methods of buying and selling securities on the exchange.

NOTE. Students who have had or are taking Business 45-46 will be allowed only half credit for this course. No credit will be allowed to students who have had or are taking Business 147-148.

**Business e51—Principles of money and banking.** 3 points Winter Session.

Messrs. H. BECKHART and J. R. BYERS. Fee \$24

Section 1—7:40-9:30 p. m., Wednesday. Room 702 Hamilton

Section 2—5:50-7:30 p. m., Thursday. Room 511 Journalism

An introductory course presenting the theory and history of money and outlining the contemporary status of the chief monetary systems; the value of money; bimetalism and kindred sys-

tems; price quotations and price measurement; principles of coinage; government paper issues and legal tender; international monetary relationships; the fundamental principles of banking; credit and its relation to money; the relation of the bank to economic life.

NOTE. The attention of prospective students who are connected with financial institutions and who are not candidates for the certificate is called to the corresponding course in money and banking, which is offered by the New York Chapter of the American Institute of Banking under the direction of Extension Teaching.

Prerequisite: Elementary Economics.

**Business e52a—Principles of money and banking.** 3 points Spring Session. Fee \$24. Messrs. H. BECKHART and J. R. BYERS.

Section 1—7:40-9:30 p. m., Wednesday.

Section 2—5:50-7:30 p. m., Thursday.

Business e51 repeated in the Spring Session.

Prerequisite: Elementary Economics.

**Business e57-58—Business statistics.** 2 points each Session. Mr. C. E. SCATTERGOOD

7:40-9:30 p. m., Tuesday. Room 605 Journalism. Fee \$16 each Session

A study of such elements of statistics as will enable the business man to understand readily current published statistics and to assist him in his individual business by the application of statistical method thereto, with due regard that the results obtained shall be worth more than the expense of the method.

The course is divided into two distinct parts, so that a student entering during the Spring Session will in no wise be handicapped. Winter Session treats of the interpretation of published statistics; Spring Session deals with the building-up and control of a statistical organization for a corporation or other business enterprise.

**Business e61—Elementary business arithmetic.** 2 points Winter Session. Mr. G. H. VAN TUYL

7:40-9:30 p. m., Tuesday. Room 507 Journalism. Fee \$16

A thorough review of fundamental operations as applied to everyday business transactions, particular attention being given to simple, short, practical methods of calculation. Special topics considered are: Aliquot parts as applied to multiplication, division, percentage and interest; rapid calculations; checking results; fundamental principles of arithmetic as used in the solution of problems; graphs; percentage and its applications; bank discount.

**Business e61a—Business mathematics.** Credit IX. 2 points Winter Session. Mr. G. H. VAN TUYL

6-7:40 p. m., Tuesday. Room 605 Journalism. Fee \$16

Business e62 repeated in the Winter Session.

**Business e62—Business mathematics.** Credit IX. 2 points Spring Session. Mr. G. H. VAN TUYL

7:40-9:30 p. m., Tuesday. Fee \$16

This course presupposes a working knowledge of elementary business arithmetic. It will include such topics as investments, sinking funds, annuities, amortization, stocks, bonds, depreciation, foreign exchange, United States customs, and equation of accounts. The structure and use of calculating tables will be illustrated. Logarithms will be explained and used in making calculations in problems in above mentioned topics.

**Business e62a—Elementary business arithmetic.** 2 points Spring Session. Mr. G. H. VAN TUYL

6-7:40 p. m., Tuesday. Fee \$16

Business e61 repeated in the Spring Session. Given if called for.



**Business e65—Railway traffic management.** 2 points Winter Session.  
 Professor T. W. VAN METRE  
 5:50-7:30 p. m., Tuesday. Room 611 Journalism. Fee \$16

Organization and service of railway and industrial traffic departments; classification; rates; traffic problems, such as demurrage, car service, routing, claims; railroad regulation. (This course is not open to students in the School of Business.)

**Business e66a—Railway traffic management.** 2 points Spring Session.  
 Professor T. W. VAN METRE  
 5:50-7:30 p. m., Tuesday. Fee \$16

Business e67 repeated in the Spring Session for new students.  
 (This course is not open to students in the School of Business.)

**Business e67-68—Latin-American commercial law.** Credit IX. 2 points each Session. Mr. T. E. OBREGON  
 7:40-9:30 p. m., Thursday. Room 611 Journalism. Fee \$16 each Session

This course aims to afford students a general legal knowledge of ways in which to carry on business in Latin-American countries.

During the Winter Session the course will cover the following topics: Merchants, their rights and obligations; commercial contracts in general; brokers; banking; agents; partnerships; corporations; purchase and sale. During the Spring Session the following will be discussed: Negotiable instruments; foreign exchange; transportation overland; insurance; patents; copyrights and trade marks; travelers taxes and licenses. Anglo-American and Spanish-American law will be compared.

**Business e67a-68a—Argentine law.** Credit IX. 2 points each Session.  
 Mr. R. GARCIA-ARIAS  
 7:40-9:30 p. m., Wednesday. Room 611 Journalism. Fee \$16 each Session

This course deals with (1) a brief historic-economic description of the country; its industrial and financial situations; the relation of the commerce and industries of the United States to the South American countries; a comparative study of commercial systems with special reference to business transactions; (2) Railroads; taxes; psychology of the people; immigration; the banking systems of the country; bankruptcy and business troubles; custom houses and port legislation.

**Business e70—Commercial law for engineering students.** Credit V.  
 2 points Spring Session. Mr. W. LILLY  
 4:30-6:10 p. m., Tuesday. Fee \$16

This course is intended to give the student some knowledge of the ordinary legal aspects of common business transactions and should enable him to gain that comprehension of business which may be had only from an understanding of the legal situations involved. A student should get from the course something of the acquaintance with the law which a business man usually acquires from business experience. He should derive from it a sense of the occasions when he should consult a lawyer for guidance to avoid making legal mistakes rather than any feeling that he is competent to dispense with legal advice. Though the student will have a text to read, the work of the lecture hour will consist almost entirely of the presentation of business situations (states of fact) and a class discussion of the legal consequences. In this way the course will cover topics of contracts, sales, bailments, negotiable instruments, agency, partnerships, real and personal property, and bankruptcy.

**Business e73—Contracts.** Credit IX. 2 points Winter Session. Professor R. W. GIFFORD  
 7:40-9:30 p. m., Thursday. Room 411 Kent. Fee \$16



This course aims to introduce the beginner to the study of the law of contracts. It deals chiefly with mutual assent and the formal requisites of contracts, such as the statute of Frauds. The subject is taught through actual business cases which have arisen in the courts.

Textbook: Keener's *Cases on Contracts* (2d ed. by Wormser and Loughran).

(Students receiving credit for Business 71-72 will not receive credit for this course.)

**Business e73a—Contracts.** Credit IX. 2 points Winter Session. Professor W. W. COOK

7:40-9:30 p. m., Thursday. Room 615 Kent. Fee \$16

Identical in scope with Business e74, but given in the Winter Session.

Prerequisite: Business e73 or e74a.

Textbook: Keener's *Cases on Contracts* (2d ed. by Wormser and Loughran).

(Students receiving credit for Business 71-72 will not receive credit for this course.)

**Business e74—Contracts.** Credit IX. 2 points Spring Session. Professor R. W. GIFFORD

7:40-9:30 p. m., Thursday. Fee \$16

A continuation of Business e73. It deals with consideration, the construction of contracts and condition of contracts.

Textbook: Keener's *Cases on Contracts* (ed. by Wormser and Loughran).

(Students receiving credit for Business 71-72 will not receive credit for this course.)

**Business e74a—Contracts.** Credit IX. 2 points Spring Session. Professor W. W. COOK

7:40-9:30 p. m., Thursday. Fee \$16

A beginner's course, identical in scope with Business e73, but given in the Spring Session; should precede Business e73a.

Textbook: Keener's *Cases on Contracts* (2d ed. by Wormser and Loughran).

(Students receiving credit for Business 71-72 will not receive credit for this course.)

**Business e75-76—Second-year business law.** Credit IX. 2 points each Session. Mr. W. LILLY

7:40-9:30 p. m., Tuesday. Room 511 Hamilton. Fee \$16 each Session

This course is for students who have had Business e73-74 or an equivalent, and is provided more especially for students of accounting, but is open to others who qualify. It will cover topics of sales, bailments, agency, partnerships, corporations, real and personal property, bankruptcy, and negotiable instruments.

(Students receiving credit for Business 71-72 will not receive credit for this course.)

**Business e77—Life insurance principles.** Credit IX. 2 points Winter Session. Mr. J. H. WOODWARD

5:50-7:30 p. m., Monday. Room 515 Kent. Fee \$16

The scope of actuarial science; mortality tables; compound interest; life contingencies; annuities; whole life insurances; endowment insurances; term insurances; joint life annuities; joint life insurances; income insurances; full level premium reserves; expense loading; modified reserve systems; distribution of surplus.

NOTE. Credit for this course will be allowed to students matriculated in the School of Business only after consultation with Professor R. H. Blanchard, Room 506 Journalism Building.

**Business e78—Life insurance practice.** Credit IX. 2 points Spring Session. Mr. J. H. WOODWARD

5:50-7:30 p. m., Monday. Fee \$16

Underwriting practice, standard lives, substandard lives; reinsurance contracts; policy changes and surrender values; beneficiaries and settlement options; trust agreements; policy loans; assignments; the disability clause; the double indemnity clause; home office and ag-

ency organization; investments; annual statement and schedules, gain and loss exhibit; taxation requirements, forms of tax returns; group insurance; industrial insurance; fraternal insurance; state supervision.

NOTE. Credit for this course will be allowed to students matriculated in the School of Business only after consultation with Professor R. H. Blanchard, Room 506 Journalism Building.

**Business e81—Fire insurance.** Credit IX. 2 points Winter Session. Professor R. H. BLANCHARD

5:50-7:30 p. m., Thursday. Room 615 Kent. Fee \$16

Fundamentals of insurance; fire insurance organizations; policy contracts, forms and interpretation; fire prevention; rating; underwriters' associations; adjustments; reinsurance; governmental supervision. A discussion of the principles, practices, and problems of fire insurance.

NOTE. Credit for this course allowed to students matriculated in the School of Business only after consultation with the instructor.

**Business e82—Marine insurance.** Credit IX. 2 points Spring Session. Professor R. H. BLANCHARD and others

5:50-7:30 p. m., Thursday. Fee \$16

A survey of the development of marine insurance with particular reference to the contract, types of losses, practical methods of underwriting and loss settlement, Lloyds and other insurers, agency and brokerage, and its bearing on foreign trade.

NOTE. Credit for this course allowed to students matriculated in the School of Business only after consultation with the instructor.

**Business e86—Casualty insurance.** Credit IX. 2 points Spring Session. Professor R. H. BLANCHARD

5:50-7:30 p. m., Wednesday. Fee \$16

Devoted principally to the development of employer's liability and to the principles and practices of workmen's compensation and its insurance; compensation insurance organizations, contracts, rates and rating, and reserves. Other leading forms of casualty insurance; such as accident and health insurance, automobile insurance, steam boiler insurance, etc.

NOTE. Credit for this course allowed to students matriculated in the School of Business only after consultation with the instructor.

**Business e90—Commercial geography of China.** Credit IX. 2 points Spring Session. Mr. Y. M. CHEN

8:20-10 p. m., Thursday. Fee \$16

This course aims to cover:

First, a general discussion of the climatic conditions in China which affect production, transport, storage and sale of goods.

Second, the past and present industries of China and industrial possibilities.

Third, a detailed discussion of the important Chinese products, chiefly from the standpoint of international trade, such as (a) products derived from wild animals, (b) mineral products, (c) products of agriculture, and (d) manufactured products.

Fourth, a comparative study of the principal Chinese ports and cities from the standpoint of commercial importance, with a view toward assisting the American import and export merchants to select proper centers for the location of their branch offices and sub-branches.

**Business eb91-92—Commercial German.** Credit IX. 4 points each Session. Dr. E. W. ROESSLER

3:10-4 p. m., Monday, Tuesday, Thursday, and Friday. Room 611 Journalism. Fee \$32 each Session

This course is intended primarily to train the student in oral business intercourse and in reading and writing German business letters. A thorough study will also be made of Germany's

commercial methods, as well as of the past commercial relations between the United States and Germany. A study of the commercial geography of Germany, of the German export policy and of related subjects will be features of the course.

Prerequisite: German B in Columbia College or equivalent.

**Business eb93-94—Commercial French: intensive training course in spoken French.** Credit IX. 2 points each Session. Professor P. DE BACOURT  
4:30-6:10 p. m., Tuesday. Room 707 Journalism. Fee \$16 each Session

To supplement Commercial French b93-94 of the School of Business.

Intended to develop facility of speech for commercial purposes.

Prerequisite: French b94 or French 4, or a command of spoken French sufficient to satisfy the instructor.

**Business eb95-96—Commercial Spanish. An intensive advanced course.** Credit IX. 3 points each Session. Mr. E. AGRAMONTE  
3:10-4:10 p. m., Wednesday; 9:30-11 a. m., Saturday. Room 605 Journalism.  
Fee \$24 each Session

To supplement Commercial Spanish b95-96 of the School of Business. The course is conducted in Spanish as much as possible.

Prerequisite: Spanish b95-96 or Spanish eB11-12, or a command of spoken Spanish sufficient to satisfy the instructor.

**For courses in Business English, see p. 7**

**Business e98—Economic problems of China with special reference to modern trade conditions.** Credit IX. 2 points Spring Session. Mr. Y. M. CHEN

8:20-10 p. m., Tuesday. Fee \$16

This lecture course aims to cover an intensive study of China's foreign trade and domestic and foreign trade in China, including a general survey of the development of Chinese commercial relations with the West, as well as a discussion of China's resources, revenues, currency, weights and measures, and transportation facilities. Special attention will be given to Chinese business methods and conditions, as well as the opportunities for American enterprise.

### *Graduate Courses*

These courses are open to qualified students without restriction. It should be noted that graduate courses to which "Credit II, IX" is not attached, do not ordinarily count for credit toward a degree. Students desiring credit toward a degree should pursue the corresponding courses given in the School of Business during the day.

**Business e111-112—The marketing of manufactured products.** Credit II, IX. 3 points each Session. Professor R. M. HAIG

7:40-9:30 p. m., Tuesday. Room 603 Hamilton. Fee \$24 each Session

A treatment of the problems of sales management involved in the distribution of manufactured products, including a consideration of such topics as market analysis, marketing organizations and methods, the function of advertising, private brands, price problems, price maintenance, etc.

Prerequisite: Business e7-8 (required only of those students desiring credit toward a degree).

**Business e117—The psychology of advertising and selling.** Credit II, IX. 3 points Winter Session. Professors H. L. HOLLINGWORTH and A. T. POFFENBERGER

7:40-9:30 p. m., Monday. Special conferences will be arranged for students with practical and research problems. Room 307 Philosophy. Fee \$24



Application of psychological principles and experimental methods to the problems of appeal and response in advertising and selling. Analysis and evaluation of the methods and devices of publicity on the basis of (1) the known facts of human nature; (2) detailed examination of actual advertising campaigns and analysis of their results; (3) application of laboratory and statistical technique; and (4) comparative study of old and new methods of marketing. The material for the entire course is based on the findings of experimental investigation and the results of actual sales campaigns. Illustrated by lantern slides and current publicity materials. This course may be appropriately followed by Psychology e146a or accompanied by Psychology e145.

**Business e118a—The psychology of advertising and selling.** Credit II, IX. 3 points Spring Session. Professor A. T. POFFENBERGER  
4:30-6:10 p. m., Wednesday. Fee \$24

This course is identical with Business e117 but is given in the Spring Session in the afternoon. It may be appropriately preceded by Psychology e145 or accompanied by Psychology e146a.

**Business e129-130—Third-year accounting.** 3 points each Session. Fee \$24 each Session. Professors R. B. KESTER and J. O. MCKINSEY

Section 1—5:50-7:30 p. m., Tuesday. Room 402 Journalism

Section 2—7:40-9:30 p. m., Friday. Room 712 Journalism

A course in advanced problems. The early part of the work will consist of specialized problems illustrating accounts and methods peculiar to various classes of enterprises. The later part will comprise selected C. P. A. and miscellaneous problems. The work of the classroom will be conducted by means of lectures, demonstrations, and reports.

A charge will be made for the problems.

Prerequisite: Business e25-26.

**Business e131-132—Auditing theory and practice.** 3 points each Session. Mr. K. L. BAKER

7:40-9:30 p. m., Thursday. Room 512 Journalism. Fee \$24 each Session

This course is for advanced students only. A text-book on auditing will be used as a basis for home assignments, and students will be expected to spend at least two hours each week preparing for the quiz which forms part of the classroom work. Students will be taught to prepare working audit programs for various classes of business. The principle object of this course will be to train and develop the analytical faculties of the students. Methods of accounting used by unsuccessful concerns will be explained and the causes of failure analyzed. Methods followed by concerns which need capital involving hypothecation of assets, and manipulation of accounts with allied and subsidiary concerns will be discussed.

Students can apply the essential underlying principles of auditing as developed in this course to practical work by taking Business e133-134 (laboratory) as a parallel course.

Prerequisite: Business e25-26.

Textbook: Montgomery's Auditing Theory and Practice—Student edition.

**Business e133-134—Accounting laboratory.** 3 points each Session. Fee \$24 each Session. Messrs. T. W. BYRNES and R. T. BICKELL

Section 1—7:30-9:40 p. m., Tuesday. Rooms 503 and 505 Journalism

Section 2—7:30-9:40 p. m., Wednesday. Rooms 503 and 505 Journalism

This course consists of laboratory work exclusively. The material used will be the account books of various firms and corporations which have gone into bankruptcy or liquidation. These records present many interesting and complicated problems. Many sets of books are available offering a wide scope for analysis and investigation. Practical questions and problems compiled from these old records will be given to the student to answer and solve by an actual examination of the books.

These will give the student a practical working test under conditions which very closely correspond to those to be met in actual practice, and the course will be particularly advanced.



tageous to students who have had only a limited opportunity to examine books used by various classes of enterprises.

The laboratory also contains many blank forms, designed for different classes of enterprises.

Prerequisite: Business e25-26, and the student should be pursuing Business e131-132 as a parallel course.

**Business e135—Office management.** Credit II, IX. 3 points Winter Session. Miss NINA MILLER

7:40-9:30 p. m., Monday. Room 302 Mines. Fee \$24

The principles involved in planning effective accounting systems and records for present day office management.

The subject matter includes organization and arrangement of the office, the relation of the various departments and persons to one another, and the records which will best furnish facts of actual conditions to the executive.

Practical work will be required in designing systems for recording the information needed in the various departments of trading, manufacturing and other business organizations, such as, purchasing, storing, credits, collections, sales, etc.

Open to undergraduates with the consent of the instructor.

**Business e136—Analysis of financial reports.** Credit II, IX. 3 points Spring Session. Miss NINA MILLER

7:40-9:30 p. m., Monday. Fee \$24

Practical application of accounting and auditing principles to the analysis and criticism of the financial reports of industrial organizations, public service corporations and railways. Drill in the classification of accounts prescribed by the Public Utility Commission of the State of New York, the Interstate Commerce Commission, and the recommendations of the Federal Reserve System.

Open to undergraduates with the consent of the instructor.

**Business e137—Public utilities accounting.** Credit II, IX. 3 points Winter Session. Mr. L. K. FRANK

7:40-9:30 p. m., Wednesday. Room 507 Journalism. Fee \$24

An examination into the principles and practices as developed by the Interstate Commerce Commission, the State Commissions, and the companies operating under the prescribed systems of accounts; the use of accounting reports for regulative and administrative purposes. underlying departmental organization; and the accounting and financial problems peculiar to public utilities.

**Business e138—Estate accounting.** Credit II, IX. 3 points Spring Session. Mr. HAROLD DUDLEY GREELEY

7:40-9:30 p. m., Friday. Fee \$24

A thorough treatment of the accounting features of trust estates. There will be given also a statement of the law governing trust estates, so far as it relates to the forms of accounting and so far as a knowledge of it is necessary to correct accounting procedure. The various tax laws affecting the estate are discussed. A short practice set for the student is provided.

Open for credit only to those who have had Business e25-26. Open to others only with the consent of the instructor.

**Business e139A—Department store accounting.** Credit II, IX. 1½ points Winter Session. Mr. H. F. BELL

7:40-9:30 p. m., Friday. Room 402 Journalism. Fee \$12

A thorough discussion of the accounting problems peculiar to the department store. Problems of organization and management so far as they affect the making of the records or their interpretation will also be considered.

Open for credit only to those who have had Business e25-26. Open to others only with the consent of the instructor.

This is an eight weeks' course running from September 24 to November 12 and should be followed by Business e139B, Brokerage accounts, in the case of students desiring credit.

This course can not be taken alone for credit, but must be taken with another course.

**Business e139B—Brokerage accounts.** Credit II, IX. 1½ points. Winter Session. Professor R. B. KESTER and assistant

7:40-9:30 p. m., Friday. Room 402 Journalism. Fee \$12

A full treatment of the records and accounts peculiar to the stock brokerage business. Problems of organization and management as affecting the accounts, the equity balance sheet, etc., will receive consideration.

Open for credit only to those who have had Business e25-26. Open to others only with the consent of the instructor. This is an eight weeks' course, running from November 19 to January 28, and should follow Business e139A, Department store accounting, in the case of students desiring credit.

This course can not be taken alone for credit but must be taken with another course.

**Business e143-144—Income tax procedure.** Credit II, IX. 3 points each Session. Professor R. M. HAIG

7:40-9:30 p. m., Tuesday. Room 612 Journalism. Fee \$24 each Session.

A consideration of the technical problems arising from the imposition of the Federal taxes on incomes and excess profits. The problems are approached from the point of view of the tax-payer who desires to determine the exact application of the law to the interests he represents.

(This course may be entered by one who is not familiar with procedure. A special short course especially designed for advanced students is planned to extend over a period of three weeks, beginning about December 2, 1920. Those interested should apply for information to the Institute of Arts and Sciences, Columbia University.)

**Business e161-162—Personnel management.** General course. 3 points each Session. Mr. L. OUTHWAITE

7:40-9:30 p. m., Tuesday. Room 508 Philosophy. Fee \$24 each Session.

This course is intended for persons in executive and personnel work in industry.

The Winter Session will be given to the presentation of personnel technique; organization of personnel department; operation of employment office (including tests and forms); assignment and follow-up of new workers; training; transfer, promotion and discharge; maintenance of plant conditions; research problems and records including calculation of turnover and periodic survey of plant personnel conditions.

The Spring Session will be given to the problems connected with industrial relations and labor maintenance; incentives and rewards (wage systems and payment plans, benefit organizations, insurance and co-operative purchasing plans); employee representation and labor organization (shop committees, industrial councils, trade unions and radical labor movements); relation of personnel work to problems of social organization.

**Business e163—Personnel methods for office executives.** Credit II, IX. 3 points Winter Session. Mr. L. OUTHWAITE

7:40-9:30 p. m., Monday. Room 616 Hamilton. Fee \$24

Employment methods and work standards for clerical and office workers; employment forms; selective tests; methods of classifying work and rating performance; work standards and manuals of operation.

**\*Business e164—Personnel methods for institutions.** Credit II, IV. 1 point Spring Session. Mr. L. OUTHWAITE

3:10-4 p. m., Monday. Fee \$8

Definition and description of personnel work; analysis of personnel of typical institutions; forms and procedures for employment and placement work; relations of medical and welfare staff to personnel office.

\*This course cannot be taken alone for credit, but must be taken with another course.

**Business e171-172—The principles and practices of factory management.** Credit II, IX. 3 points each Session. Professor W. RAUTENSTRAUCH  
7-9 p. m., Friday. Room 702 Hamilton. Fee \$24 each Session.

This course is adapted to men in the industries who are in charge of departments of factories. Other men qualified by contact with production problems are also admitted. Attendants to these lectures will be instructed in the principles underlying the successful management of factories and the practices of representative industries in the conduct of planning departments, tool rooms, drafting rooms, store rooms, purchasing and sales departments.

The problem of wage payments, costs of production and methods of cost finding and estimating are dealt with.

Attention is given to the establishment of lines of control through line organization and functional organization and to the graphic representation of the prime variable of the business upon which control may be founded. A couple of visits may be made to the factories operating under the lecturer's general supervision.

**Business e189—Business methods in foreign trade: selling in foreign markets.** Lectures, text, reports and discussion. Credit II, IX. 3 points Winter Session. Fee \$24. Professor G. E. SNIDER

Section 1—4:30-6:10 p. m., Friday. Room 512 Journalism

Section 2—7:40-9:30 p. m., Friday. Room 512 Journalism

Methods of locating a market; study of the market; the functions, organization and operations as affected by line and market; direct sales by large scale organizations and Webb Law Associations; selling through salesmen and agents; agency contracts; correspondence, catalogues, advertising; credit terms as sales factors; transportation, communication, banking, insurance and investments as trade factors; miscellaneous sales factors.

(Each section restricted to forty students.)

**Business e190—Business methods in foreign trade; the technique of documents, paper work and shipping.** Lectures, text, reports, discussion, practice work. Credit II, IX. 3 points Spring Session. Fee \$24. Professor G. E. SNIDER

Section 1—4:30-6:10 p. m., Friday

Section 2—7:40-9:30 p. m., Friday

The course includes a study of and practice with the documents and forms used in export trade, and the study of related export problems. The inquiry, analysis of quotation, the export order; specifications as to quantity and quality; price policy; the purchase order; packing and marking; inland traffic problems; port problems; shipping procedure and organization; ocean freight rates, freight contracts, bills of lading, shippers export declaration, insurance certificate, consular invoice, financial documents, etc.; terms of sale, terms of payment and delivery; function of the freight forwarder, insurance broker, banker.

(Each section restricted to forty students.)

**Business e195-196—American field crops.** Credit II, IX. 3 points each Session. 8 hours laboratory or equivalent. Conference weekly. Report optional. Professor O. S. MORGAN

Hours to be arranged. Fee \$24 each Session

The course consists of a study of the principles underlying the production and management of cereal and forage crops, and farm management factors related thereto.

Advanced studies of pot jar, and cylinder soils' work is laboratory option.

Prerequisite: Agriculture e1-2, e3-4, Business e41-42, or their equivalent, and satisfactory preparation in botany and chemistry.



**Business e197-198—Soil management.** Fertilizers, soil amendments, soil toxins as related to plant production. Credit II, IX. 3 points each Session. 8 hours laboratory. Conference weekly. Report required. Professor O. S. MORGAN  
Hours to be arranged. Fee \$24 each Session

The work consists of fertilizer and crop tests of soils that have been surveyed. Careful laboratory tests and studies are emphasized, as well as a thorough study of experiment station publications.

Prerequisite: Agriculture e1-2, e3-4, or their equivalent, and satisfactory preparation in botany and chemistry.

**History e177—Latin America: people; government; resources.** Credit II, IX. 3 points Winter Session. Professor W. R. SHEPHERD

7:30-9:10 p. m., Monday. Room 615 Kent. Fee \$24

This course, followed by History e178, aims to supply the knowledge and cultivate the attitude of mind which may enable Americans to understand Latin-Americans, appreciate their circumstances, work with them along the lines of material and intellectual progress, and contribute in general to the promotion of inter-American friendship and commerce.

**History e178—Latin America: industry; transportation; commerce.** Credit II, IX. 3 points Spring Session. Professor W. R. SHEPHERD

7:30-9:10 p. m., Monday. Fee \$24

See description of History e177.

**Psychology e145—Vocational and industrial psychology.** Credit II, IX. 3 points Winter Session. Professors H. L. HOLLINGWORTH and A. T. POFFENBERGER

4:30-6:10 p. m., Wednesday. Special conferences will be arranged for students with practical and research problems. Room 407 Schermerhorn. Fee \$24

Psychological methods and principles applied to the problems of human engineering, in such fields as vocational guidance, the selection of employees, management and organization of personnel, industrial time and motion study, job-analysis, trade-testing, and the personal and environmental conditions of effective and satisfying work. Illustrated by concrete demonstrations and by the results of current studies in the field. This course may be appropriately followed by Business e118a or accompanied by Business e117.

**Psychology e146a—Vocational and industrial psychology.** Credit II, IX. 3 points Spring Session. Professor A. T. POFFENBERGER

7:40-9:30 p. m., Monday. Fee \$24

This course is identical with Psychology e145 but is given in the Spring Session and in the evening. It may be appropriately preceded by Business e117 or accompanied by Business e118a.

### *Economics*

**Economics e1-2—Principles of economics.** Credit I. 3 points each Session. Fee \$24 each Session. Messrs. D. L. DODD and W. H. REEVES

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 509 Hamilton

Section 2—4:30-5:45 p. m., Monday and Thursday. Room 509 Hamilton

Section 3—4:30-5:45 p. m., Tuesday and Friday. Room 602 Hamilton

Economics is the study of business activity from the standpoint of public welfare. This course undertakes first to explain the present-day organization and operation of industry, and second to consider how far the present situation needs correction from the standpoint of efficiency in production and justice in distribution. The course will be concerned with an historical and analytical study of the principles, followed by a discussion of practical economic questions, such as the tariff, money and banking, the labor problem, etc.



**Economics e1a-2a—Principles of economics.** 2 points each Session. Fee \$16 each Session. Messrs. D. L. DODD, F. S. HASEROT, and W. H. REEVES  
 Section 1—5:50-7:30 p. m., Wednesday. Room 502 Hamilton  
 Section 2—7:40-9:20 p. m., Wednesday. Room 502 Hamilton  
 Section 3—7:40-9:20 p. m., Thursday. Room 502 Hamilton  
 Section 4—7:40-9:20 p. m., Friday. Room 509 Hamilton

This course covers the same ground as Economics e1-2, but involves less extensive reading and discussion.

**Economics e4—Principles of economics.** Credit I. 3 points Spring Session. Mr. F. S. HASEROT

4:30-5:45 p. m., Tuesday and Friday. Fee \$24

Economics e1 repeated in the Spring Session for new students. A beginning class.

**Economics e4a—Principles of economics.** 2 points Spring Session. Fee \$16. Messrs. F. S. HASEROT and J. C. BONBRIGHT

Section 1—7:40-9:20 p. m., Wednesday

Section 2—7:40-9:20 p. m., Thursday

Economics e1a repeated in the Spring Session for new students. A beginning class.

**Economics e5—Principles of economics.** Credit I. 3 points Winter Session. Mr. J. C. BONBRIGHT

4:30-5:45 p. m., Tuesday and Friday. Room 509 Hamilton. Fee \$24

Economics e2 given in the Winter Session.

Prerequisite: Economics e1.

**Economics e5a—Current economic problems.** 2 points Winter Session. Mr. L. R. ROBINSON

7:40-9:20 p. m., Wednesday. Room 517 Hamilton. Fee \$16

Economics e2a given in the Winter Session.

Prerequisite: Economics e1a.

**Economics eb103-104—Social standards in modern industrial society.** Credit II, IX. 3 points each Session. Mr. L. R. ROBINSON

7:30-9:10 p. m., Thursday. Room 610 Journalism. Fee \$24 each Session

An advanced course in economics for the consideration of the fundamentals of economic life in the light of present social movements. In tracing the development of accepted social standards some attention will be paid to the significance of radical movements such as communism, syndicalism, and guild socialism.

The course considers the part which government and other social or co-operative agencies play in the improvement of working conditions, the advancement of public welfare, and the general direction of economic effort. Illustrative material is drawn from the work of such bodies as the Federal Reserve Board, the Interstate Commerce Commission, and the Federal Trade Commission. American problems are emphasized and each is studied in its theoretical and historical connection with the general subject matter of the course.

Prerequisite: Elementary economics.

For a course in Spanish-American civil law, see Law eX4, p. 90

## CABLE TELEGRAPHY

**Cable telegraphy e11-12—Cable telegraphy.** 3 points each Session. Professor W. I. SLICHTER and Mr. A. CUNNINGHAM

7:30-9:20 p. m., Monday and Thursday. Room 307 Engineering. Fee \$24 each Session

This course is designed to give a training in both the scientific or technical principles of cable telegraphy, as well as in the manipulative skill and practice required to send and receive messages by the Morse Code as used by the cable companies. It is intended to equip the student with that knowledge and skill required to become an operator, and with sufficient scientific knowledge to assist him to rise to the position of chief electrician or superintendent of stations.

Students who take this course with the intention of becoming operators will be eligible for the scholarships valued at \$30 each. For information as to these scholarships address the Secretary of Columbia University.

## CHEMISTRY

**Chemistry eA1—General chemistry.** Elementary course for students beginning the study of chemistry. 2 lectures, 1 recitation, and 2 hours' laboratory practice a week. Credit I, IV. 4 points Winter Session. Fee \$32. Dr. MARY A. GRIGGS and Mr. G. E. LANDT

Section 1—Lectures, 7-7:50 p. m., Monday and Thursday. Room 309 Havemeyer

Recitation, 8-8:50 p. m., Monday. Rooms 307 and 511 Havemeyer

Laboratory, 8-9:50 p. m., Thursday. Room 615 Havemeyer

Section 2—Lecture, 7-7:50 p. m., Tuesday and Friday. Room 309 Havemeyer

Recitation, 8-8:50 p. m., Friday. Rooms 307 and 511 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday. Room 615 Havemeyer

This course is the duplicate of the day course Ar. It is prerequisite to the other courses in chemistry given in Extension Teaching and to the first-year chemistry in the combined six-year College and Engineering course.

Deposit for breakage, \$20.

Text-books: Smith's *Elementary Chemistry* and *Laboratory Outline* (interleaved).

**Chemistry eA2—General chemistry.** Course eA1 repeated in the Spring Session for students desiring to begin in February. Credit I, IV. 4 points Spring Session. Fee \$32. Dr. MARY A. GRIGGS and Mr. G. E. LANDT

Section 1—Lectures, 7-7:50 p. m., Monday and Thursday

Recitation, 8-8:50 p. m., Monday

Laboratory, 8-9:50 p. m., Thursday

Section 2—Lectures, 7-7:50 p. m., Tuesday and Friday

Recitation, 8-8:50 p. m., Friday

Laboratory, 8-9:50 p. m., Tuesday

Deposit for breakage, \$20.

**Chemistry eA3-A4—General chemistry.** Elementary course for students beginning the study of chemistry. Saturday afternoons throughout the year. Credit I, IV. 2 points each Session if taken for the entire year. Fee \$16 each Session. Mr. F. HOLLANDER

1-4:30 p. m., Saturday

Lecture 3:30-4:30 p. m.; recitation, 3-3:30 p. m. Room 311 Havemeyer

Laboratory 1-3 p. m. Room 615 Havemeyer

Identical with eA1 or eA2.

Deposit for breakage, \$20 for the year.

Students using Chemistry eA4 to complete an imperfect elementary preparation may receive 4 points for the course on the approval of the instructor, paying \$32. Such students must register for Chemistry eA4 (a).

**Chemistry eX1-X2—Technical-industrial quantitative analysis.** 3½ points each Session. Fee \$28 each Session. Professor H. A. FALES

7-9:50 p. m., Tuesday and Friday

Lecture, 7-7:50 p. m., Tuesday. Room 301 Mines

Laboratory, 8-9:50 p. m., Tuesday; 7-9:50 p. m., Friday. Room 504 Havemeyer

A course primarily designed so that those who are engaged in laboratories or works may follow up the technique or theoretical principles of the particular problems in which they are interested. The laboratory work will be assigned largely to meet the individual requirements of each student; the classroom work will be coordinated with that of the laboratory, and in addition will include certain topics of general interest, such as the theory of neutralization reactions, oxidation-reduction, complex ion formation, etc.

Prerequisite: Actual employment in a laboratory or works, or Chemistry 3-4, 11-12; Physics 6, 7-8, 49-50.

**Chemistry e3-4—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week in each Session. Credit I, IV, V. 5 points each Session. Fee \$40 each Session. Identical in content and credit with Chemistry e6-7. Mr. S. J. KIEHL and assistants

7-9:50 p. m., Tuesday, Wednesday, and Friday

Lecture, 7-7:50 p. m., Tuesday, Wednesday, and Friday. Room 311 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday. Room 615 Havemeyer

Identical with Chemistry e6-e7.

Deposit for breakage, \$25 first term; \$20 second term.

Prerequisite: Chemistry eA1, eA2, or the equivalent, and elementary physics.

**Chemistry e6—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Spring Session. Fee \$40. Professor C. D. CARPENTER and assistants

7-9:50 p. m., Tuesday, Wednesday, and Friday

Lecture, 7-7:50 p. m., Tuesday, Wednesday, and Friday

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday

This course, which presupposes a knowledge of general chemistry (eA1) continues the study of general chemistry, with particular reference to giving a greater knowledge of descriptive chemistry and a more advanced and systematic discussion of general principles and their applications. This course followed by Chemistry e7 aims thus to prepare the student for the courses in organic chemistry or in qualitative analysis. It is equivalent to Chemistry 6—required of all first-year students in the combined six-year College and Engineering course, or to Chemistry 3-.

Deposit for breakage, \$25.

Text-books: Smith's *Introduction to Inorganic Chemistry* and *Experimental Inorganic Chemistry*.

Prerequisite: Chemistry eA1 or eA2 or the equivalent.

NOTE. Chemistry eA1 followed by Courses e6-7 or e3-4, e11, and e45-46 are accepted for admission to the College of Physicians and Surgeons.

**Chemistry e7—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Winter Session. Fee \$40. Professor C. D. CARPENTER and assistant

7-9:50 p. m., Tuesday, Wednesday, and Friday

Lecture, 7-7:50 p. m., Tuesday, Wednesday and Friday. Room 307 Havemeyer Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday. Room 615 Havemeyer

This course is a continuation of Chemistry e6. It is equivalent to Chemistry -7 required of all second-year students in the combined six-year College and Engineering course, or to Chemistry -4.

Deposit for breakage, \$20.

Prerequisite: Chemistry e6 or e3 or the equivalent.

**Chemistry e11—Qualitative analysis.** 2 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Winter Session. Fee \$40. Mr. L. P. HAMMETT

7-9:50 p. m., Tuesday and Friday; 8-9:50 p. m., Wednesday

Lecture, 7-7:50 p. m., Tuesday and Friday. Room 511 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday. Room 615 Havemeyer

A systematic course in the theory and practice of inorganic qualitative analysis based upon the principles of modern chemistry. It is equivalent to Chemistry 14- required of all second-year students in the combined six-year College and Engineering course, or to Chemistry 11-.

Deposit for breakage, \$25.

Text-book: Steiglitz' *Qualitative Analysis, Pt. I.*

Prerequisite: Chemistry e6-7, 6-7, e3-4, or 3-4.

NOTE. Students who have previously completed the greater part of this course may, with the consent of the Director, register for the remainder, counting it 1 to 3 points.

**Chemistry e12—Qualitative analysis.** 1 hour classroom and 6 hours' laboratory work a week. Credit I, IV, V. 4 points Spring Session. Fee \$32. Mr. L. P. HAMMETT

8-9:50 p. m., Tuesday and Friday; 7-9:50 p. m., Wednesday

Lecture, 7-7:50 p. m., Wednesday

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday

This course is a continuation of Chemistry e11. It is equivalent to Chemistry -15 required of all third-year students in the combined six-year College and Engineering course, or to Chemistry -12.

Deposit, \$20.

Text-book: Steiglitz' *Qualitative Analysis, Pt. I.*

Prerequisite: Chemistry e14, 14- or -12.

NOTE. Students who have previously completed the greater part of this course may, with the consent of the Director, register for the remainder, counting it 1 to 3 points.

**Chemistry e14—Qualitative analysis.** 2 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Spring Session. Fee \$40. Mr. L. P. HAMMETT

7-9:50 p. m., Tuesday and Friday; 8-9:50 p. m., Wednesday

Lecture, 7-7:50 p. m., Tuesday and Friday

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday

Identical with Chemistry e11, but given in the Spring Session. Should be followed by Chemistry e15.

Prerequisite: Chemistry e6-7, 6-7, e3-4 or 3-4.

Deposit for breakage, \$25.



**Chemistry e15—Qualitative analysis.** 1 hour classroom and 6 hours' laboratory work a week. Credit I, IV, V. 4 points Winter Session. Fee \$32. Mr. L. P. HAMMETT

8-9:50 p. m., Tuesday and Friday; 7-9:50 p. m., Wednesday  
Lecture, 7-8:50 p. m., Wednesday. Room 511 Havemeyer  
Laboratory, 8-8:50 p. m., Tuesday, Wednesday, and Friday. Room 602 Havemeyer

Identical with Chemistry e12, but given in the Winter Session. Should be followed by Chemistry e72.

Prerequisite: Chemistry e14 or e11.

Deposit for breakage, \$20

**Chemistry e45-46—Organic chemistry.** Short course. 1½ hours' classroom and 3 hours' laboratory work a week in each Session. Credit I, IV. 3 points each Session. Fee \$24 each Session. No credit for Chemistry e45 or e46 separately. Dr. T. C. TAYLOR and assistant

7-9:15 p. m., Tuesday and Friday

Lecture, 7-7:40 p. m., Tuesday and Friday. Room 413 Havemeyer

Laboratory, 7:40-9:15 p. m., Tuesday and Friday. Room 602 Havemeyer

A brief survey of the more important classes of organic compounds.

Deposit for breakage, \$30 each Session.

Prerequisites: Chemistry e3-4, e6-7 or the equivalent, and elementary physics. Chemistry e11 or e14 is recommended also.

Equivalent to Chemistry 46.

**For courses in General Science, see Journalism e1 (Popular Chemistry) and e2, p. p. 86, 87**

## CHINESE

### *Far Eastern Trade and Business Chinese*

The Slavonic Department under Professor JOHN DYNELEY PRINCE, with the consent of the University authorities, has arranged to administer temporarily the following courses. Students in the School of Business are allowed to take the following courses only upon the approval of the Director:

**Business e90—Commercial geography of China.** Credit IX. 2 points Spring Session. Mr. Y. M. CHEN

8:20-10 p. m., Thursday. Fee \$16

This course aims to cover:

First, a general discussion of the climatic conditions in China which affect production, transport, storage and sale of goods.

Second, the past and present industries of China and industrial possibilities.

Third, a detailed discussion of the important Chinese products chiefly from the standpoint of international trade, such as (a) products derived from wild animals, (b) mineral products, (c) products of agriculture, and (d) manufactured products.

Fourth, a comparative study of the principal Chinese ports and cities from the standpoint of commercial importance, with a view toward assisting the American import and export merchants to select proper centers for the location of their branch offices and sub-branches.

**Business e98—Economic problems of China with special reference to modern trade conditions.** Credit IX. 2 points Spring Session. Mr. Y. M. CHEN  
8:20-10 p. m., Tuesday. Fee \$16

This lecture course aims to cover an intensive study of China's foreign trade and domestic and foreign trade in China, including a general survey of the development of Chinese commercial relations with the West, as well as a discussion of China's resources, revenues, currency, weights and measures, and transportation facilities. Special attention will be given to Chinese business methods and conditions, as well as to the opportunities for American enterprise.

**Chinese e4—Business Chinese.** Credit IX. 3 points Spring Session.  
Mr. Y. M. CHEN

7:00–8:15 p. m., Wednesday and Friday. Fee \$24

This practical course is designed to give to students a working knowledge of everyday Mandarin, with special emphasis on the business vocabulary. It will include the use of Romanized Chinese, the principle of the construction of the essential Chinese characters, as well as conversation lessons in Mandarin, with thorough drill in the tones.

### CROATIAN (See Serb, p. 114)

### DRAWING

**Drawing eW1—Freehand drawing.** 2 points Winter Session. Mr. H. F. LEMCKE

1:30–5:30 p. m., Saturday. Room 406 Engineering. Fee \$16

Will consist of practice in the elements of freehand perspective, and in drawing from casts or machine parts in outline, and in light and shade.

The completion of this course will be accepted as satisfying the entrance requirement in drawing.

**Drawing eW2—Freehand drawing.** 2 points Spring Session. Mr. H. F. LEMCKE

1:30–5:30 p. m., Saturday. Fee \$16

Drawing eW1 repeated in the Spring Session.

### ECONOMICS (See Business, pp. 49, 50)

### ENGINEERING

#### *Automobile Engineering*

**Automobile engineering e1—Internal combustion engines.** 2 points Winter Session. Mr. F. H. DUTCHER

7:30–9:20 p. m., Wednesday. Room 307 Engineering. Fee \$16

#### *Civil Engineering*

**NOTE.** With the exception of Civil Engineering e1-2, these courses are intended solely for men already engaged in practical work. They do not correspond to day courses and no university credit is allowed for them. Students should note the prerequisites and are urged to confer with the instructor when in doubt as to the requirements. In connection with the courses in surveying attention is called to the complete practical courses given during the summer at Camp Columbia, Lakeside, Conn. These courses are open to properly qualified students who have fulfilled the necessary prerequisites. For further information address the Secretary, Columbia University, New York.

**Civil engineering e1-2—Theory of plane surveying.** Equivalent to Civil Engineering 2 advised for all students in the college preparatory course preliminary

to the graduate courses in civil, mining, metallurgical, and sanitary engineering. Credit I, V. 2 points each Session. Mr. W. J. KREFELD

7:30-9:10 p. m., Wednesday. Room 306 Engineering. Fee \$16 each Session

Winter Session: General principle of surveying and surveying instruments. Units and measurements. Errors and limits of precision. Tapes and measurement of distances. The vernier and level bubble. The wye and dumpy levels, theory of leveling, and rods. The compass, magnetic declination and variation, and local attraction. The engineer's transit; measurement of angles, azimuth and traversing. Latitude and departure, error of closure.

Spring Session: Surveys and computations; Land surveying, including farm, city and public land surveys, computation of coordinates and areas, parting off land, description, and relocation. Topographic surveying, transit and stadia method, theory and reduction of stadia measurements, the plane table and government work. Hydrographic, mine and construction surveys. An opportunity will be given students to handle and use the instruments described, by special arrangement with the instructor.

Prerequisite: Plane trigonometry (see Structural mechanics eX1-X2) or equivalent; also Winter Session prerequisite for Spring Session.

Text-book: Finch's *Plane Surveying*.

### **Civil engineering eY1-Y2—Plain and reinforced concrete construction.**

3 points each Session. Professor J. K. FINCH

7:30-9:10 p. m., Monday and Thursday. Room 306 Engineering. Fee \$24 each Session

Winter Session: Advantages, general definitions. Cement, manufacture, specifications, testing. The aggregate, proportions and strength of concrete. Mixing, depositing, forms. Flexure and design of plain beams. Reinforced beams. Rectangular and 'T' beams in bending. Shear and diagonal tension. Slabs. Columns.

Spring Session: Theory, design and construction. Bearing power of soils, earth and water pressure and loads. Gravity and cantilever retaining walls. Counterfoot reservoir wall. Slab and buttress dam. Design of forms for same. Design of pipes and standpipe. Highway slab and girder bridges. Loft building, including foundations and typical beams and columns.

No text-book will be used for this course, but students will be furnished with pamphlets, notes and tables. The Spring Session will be largely given over to actual design. The instructor will be present on evenings set for this work, from 7-10, in the drafting room, Room 404 Engineering. As a reference book on the work of the Winter Session, Hool's *Reinforced Concrete Construction*, Vol. I, and as a general reference, Hool and Johnson, *Concrete Engineers' Handbook*, are recommended.

Prerequisites: Structural mechanics eZ1-Z2 and Mechanical drafting e1-2 or equivalent; also Winter Session prerequisite to Spring Session.

### *Electrical Engineering*

#### **Electrical engineering e1—Elements of electrical engineering. Lectures.**

4 points Winter Session. Mr. F. R. KELLER

7:30-9:10 p. m., Tuesday and Friday. Room 302 Engineering. Fee \$32

Designed to give the student a general knowledge of the principles of electricity and magnetism and their applications in engineering practice.

Covers magnetism, electromagnetism, the application of Ohm's law to series and parallel circuits, power measurements, practical applications of Kirchhoff's laws, inductance, etc.

Prerequisites: Algebra, elementary chemistry and physics. Students should consult the instructor as to these prerequisites.

#### **Electrical engineering e2—Principles of direct current machinery.**

Lectures and laboratory. 3 points Spring Session. Mr. F. R. KELLER

7:30-9:10 p. m., Tuesday and Friday. Fee \$24



Designed to give the student a knowledge of the construction and characteristics of direct-current generators and motors.

Covers the theory of generators and motors. Laboratory work consists of experimental work with shunt and compound generators and shunt, series and compound motors.

Prerequisite: Electrical engineering e1.

NOTE. A deposit of \$10 to cover possible breakage is required of students taking Electrical engineering e2.

**Electrical engineering e3—Elements of alternating currents.** Lectures. 4 points Winter Session. Professor F. W. HEHRE  
7:30–9:10 p. m., Monday and Thursday. Room 302 Engineering. Fee \$32

Designed to give the student a general knowledge of the principles of alternating currents.

Covers voltage and current relations in series and parallel circuits, power and power factor, inductive and capacity reactance, single and polyphase alternating current generators and armature windings.

Prerequisites: Electrical engineering e1 and e2 or equivalent. Students not having credit for e1 and e2 should consult with the instructor as to these prerequisites.

**Electrical engineering e4—Principles of alternating current machinery.** Lectures and laboratory. 3 points Spring Session. Professor F. W. HEHRE  
7:30–9:10 p. m., Monday and Thursday. Fee \$24

Designed to give the student a general knowledge of the construction and characteristics of alternating current machinery.

Considers the theory and operation of the principal types of alternating current machinery. Laboratory work consists of some experimental work with the alternator, transformer, induction and synchronous motors, rotary converter and the parallel operation of alternators.

Prerequisite: Electrical engineering e3.

NOTE. A deposit of \$10 to cover possible breakage is required of students taking Electrical engineering e4.

**Electrical engineering e5-6—Theory and operation of vacuum tubes and other high frequency apparatus.** 3 points each Session. Professor J. H. MORECROFT

7:30–9:20 p. m., Thursday. Room 301 Mines. Fee \$24 each Session

A review of advanced alternating current theory will take up the first part of the course; the characteristics of circuits such as are used in radio telegraphy and telephony will be treated in detail, numerous problems being given to illustrate the conclusions reached theoretically. Emphasis will be laid upon the limitations of the ordinary formulæ when used in high frequency calculations.

The vacuum tube will be treated as completely as possible, its functions as detector, amplifier, and power generator being examined theoretically and in the laboratory. A course of about twelve experiments will parallel the lecture work; the experiments will embrace use of tubes, wave-meters, and other high frequency apparatus.

Prerequisites: The course is intended for those who have already had a thorough training in ordinary alternating current theory and measurements; enrolment only after personal interview with instructor in charge of the work.

See also Cable Telegraphy, p. 50

### *Mechanical Drafting*

**Drafting e1-2—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points each Session. Professor T. H. HARRINGTON and assistant

\*Students will be required to furnish their own drafting instruments and materials.



7:20-10 p. m., Tuesday and Friday. Room 601 Engineering. Fee \$16 each Session

This course is the equivalent of Drafting 1-2 given to college students looking forward to the new advanced course in engineering.

It should, if possible, be taken in conjunction with Drafting e3-4.

The topics covered will be: the use of instruments; geometrical drafting; lettering; orthographic projection; topographical drafting; elementary working drawings.

Those desiring a knowledge of how to read mechanical drawings are advised to take drafting c1-2 and e3.

**Drafting e1a—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points Winter Session. Professor T. H. HARRINGTON and assistant

7:20-10 p. m., Tuesday and Friday. Room 601 Engineering. Fee \$16

Identical with Drafting e2, but given in the Winter Session.

For description see Drafting e1-2 above.

**Drafting e2a—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, V. 2 points Spring Session. Professor T. H. HARRINGTON and assistant

7:20-10 p. m., Tuesday and Friday. Fee \$16

Drafting e1 repeated in the Spring Session for students entering in February.

For description see Drafting e1-2 above.

**Drafting e3-4—Descriptive geometry.** 2 hours' lectures per week. Credit I, V. 2 points each Session. Professor T. H. HARRINGTON

6:30-7:20 p. m., Tuesday and Friday. Room 307 Engineering. Fee \$16 each Session

This course will cover elementary problems relating to the point, right line, and plane; generation and classification of lines and surfaces; tangent planes to surfaces of single and double curvature; intersection of surfaces by planes; development of single curved surfaces; intersection of single curved surfaces. If possible, this course should be taken in conjunction with Drafting e1-2.

**Drafting e6, e7, e8—Graphics, engineering, and structural drafting.** 3 hours' drafting room work per week. 1 point for each course. Professor T. H. HARRINGTON

7:20-10:00 p. m., Tuesday or Friday. Room 601 Engineering. Fee \$8 for each course

These courses are identical with Drafting 6, 7, and 8, and are open only to students in the Schools of Mines, Engineering, and Chemistry.

**Drafting e8a—Structural drafting.\*** 6 hours' drafting-room work per week. 2 points Spring Session. Professor T. H. HARRINGTON

7:20-10 p. m., Tuesday and Friday. Fee \$16

This course includes methods used in the detailing of structural work, standard connections, beams, columns, plate girders and roof trusses.

Prerequisite: Elements of mechanical drafting.

\*Students will be required to furnish their own drafting instruments and materials.

*Structural Mechanics*

NOTE. The following courses in structural mechanics are intended only for men engaged in practical work. They do not correspond to day courses and no university credit is allowed for them. For specific courses in architecture, especially in building materials, see pages 00 and following.

**Structural mechanics eX1-X2—Elements and applications of algebra and trigonometry.** 2 points each Session. Mr. R. F. CLARK

6:10-7 p. m., Monday and Thursday. Room 302 Engineering. Fee \$16 each Session

The aim of this course is twofold: first, to give the student beginning the study of structural mechanics a clear understanding of the mathematics necessary for further study of the subject; second, to fit him to handle his present practical problems with greater facility.

The work of the Winter Session will consist of a drill in the principles and applications of elementary algebra, through quadratics, and including graphic methods. In the Spring Session there will be given a course in plane trigonometry and its application to problems of a practical nature. A thorough drill in the use of logarithms and the slide rule will be included.

Students are urged to present for class discussion problems arising in their work.

**Structural mechanics eZ1—Elements of coplanar statics.** 3 points Winter Session. Professor C. H. BURNSIDE

6:10-7 p. m., Tuesday and Thursday. Room 510 Fayerweather. Fee \$24

Algebraic and graphic methods are used in parallel; composition and resolution of forces; principles of equilibrium; determination of stresses in simple jointed frames, such as trusses and cranes; centers of gravity and centroids.

Prerequisite: Course eX1-X2 or its equivalent.

Text-book: Maurer's *Technical Mechanics*, third edition.

**Structural mechanics eZ2—Elements of mechanics of materials.** 3 points Spring Session. Professor C. H. BURNSIDE

6:10-7 p. m., Tuesday and Thursday. Fee \$24

Continuation of Course eZ1. Moments of inertia and radii of gyration of plane areas, built-up beam and column sections; direct tension, compression and shear; strength of beams, columns and riveted joints; deflection of beams.

Prerequisite: Course eZ1.

Text-book: Merriman's *Mechanics of Materials*.

**Structural mechanics eZ5-Z6—Estimating for building construction.** 3 points each Session. Mr. J. H. EISELE

7:30-9 p. m., Monday and Thursday. Room 406 Engineering. Fee \$24 each Session

This course consists of the study of types of building construction, kinds of materials used and customary practice of architects and general contractors' offices. Each student is provided with a complete set of plans and specifications from which quantity surveys are made for the various trades involved in building construction. Estimating forms used in different general contractors' offices are studied. Detailed unit cost analysis and the substitution of more economic designs are worked out.

Textbook: Joslins' *Plan Reading and Estimating*.

Reference Books: Kidder's *Pocket Companion*; Walker's *Estimators' Reference*; New York Building and Labor Codes.

Prerequisites: Students should consult the instructor for the prerequisites of this course.

## ENGLISH

For advice in regard to courses designated English A, students should consult Dr. D. L. Clark, Room 710 Journalism Building, and in regard to courses in preparatory English, Mr. D. B. Duncan, Room 711 Journalism Building.

*Collegiate Courses in Composition*

**English eA1-A2—English composition.** Lectures, themes, and conferences. Credit I, IV. 3 points each Session. Fee \$24 each Session. Drs. D. L. CLARK, FLORA R. AMOS, DOROTHY BREWSTER, R. TAYLOR, S. L. WOLFF, Messrs. A. C. BABENROTH, M. M. HOOVER, G. H. MULLIN, Mrs. L. S. DIETRICK and Miss CATHERINE NEEDHAM

Section 1—1:45-3 p. m., Monday and Thursday. Rooms 707, 712 Journalism, 311 Havemeyer and 403 Avery

Section 2—1:45-3 p. m., Wednesday and Friday. Rooms 603, 707, 712, 713 Journalism

Section 3—3:10-4:25 p. m., Monday and Thursday. Rooms 507 Hamilton, 603, 610 Journalism

Section 4—3:10-4:25 p. m., Tuesday and Friday. Rooms 511, 601 and 603 Hamilton

Section 5—4:30-5:45 p. m., Monday and Thursday. Rooms 605, 610 Journalism

Section 6—4:30-5:45 p. m., Tuesday and Friday. Room 605 Journalism

Section 7—7-8:15 p. m., Monday and Thursday. Room 507 Hamilton

Section 8—7-8:15 p. m., Tuesday and Friday. Room 507 Hamilton

Section 9—8:20-9:35 p. m., Monday and Thursday. Room 507 Hamilton

Section 10—8:20-9:35 p. m., Tuesday and Friday. Room 507 Hamilton

This course aims to give collegiate instruction in the fundamentals of structure and style in both practical and imaginative writing. As it is planned for students who have had four years of high school English or a satisfactory equivalent, it presupposes the student's mastery of English spelling, grammar, and punctuation.

**English eA3-A4—English composition.** Lectures, themes, and conferences. Credit I, IV, if taken both Sessions. 1½ points each Session. Dr. S. L. WOLFF 9-10:15 a. m., Saturday. Room 707 Journalism. Fee \$12 each Session

This course is equivalent to one-half of English A. It is offered for teachers and students who desire to gain a knowledge of the principles of rhetoric and English composition as they are now taught in the colleges.

Two one-page themes or one three-page theme a week will be called for. Students are expected to confer regularly with the instructor at times to be appointed within the conference period, 10:15-10:45 a. m. No other engagements should be made for this half-hour.

**English eA8—English composition.** Lectures, themes, and conferences. Credit I, IV. 3 points Spring Session. Fee \$24

Hours to be arranged. See Spring Session Announcement.

Course eA1 repeated in the Spring Session for new students.

**English eA9—English composition.** Lectures, themes and conferences. Credit I, IV. 3 points Winter Session. Fee \$24. Drs. D. L. CLARK and R. TAYLOR and Mr. A. C. BABENROTH



Section 1—3:10-4:25 p. m., Monday and Thursday. Room 605 Journalism

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 605 Journalism

Section 3—4:30-5:45 p. m., Monday and Thursday. Room 507 Hamilton

Section 4—4:30-5:45 p. m., Tuesday and Friday. Room 511 Hamilton

Section 5—7-8:15 p. m., Tuesday and Friday. Room 607 Hamilton

Course eA2 given in the Winter Session for students who have already had English eA1 or eA3 or the equivalent.

### *Special Courses in Writing*

No entrance examinations are required for admission to any of the following classes, but prospective students are expected to satisfy the individual instructors of their ability to profit by the course in question. New students intending to register for any of these courses should send to the Office of Extension Teaching, not later than September 15, a story, sketch, or article of about 1,500 words, together with a letter of application for admission to a specified class.

**English e1-2—Advanced composition. Magazine articles.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Dr. D. L. CLARK

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 707 Journalism

Section 2—7-8:15 p. m., Monday and Thursday. Room 603 Journalism

This course will aim at teaching the composition of all types of writing that appear in the modern magazine, excepting fiction, drama and poetry. It is designed for the training of professional writers, but other students of ability may elect it with profit. There will be much actual composition and classroom discussion and frequent individual conferences with the instructor. Able students desiring assistance in the solution of their special problems will not be bound to a fixed program.

Since admission to this class is granted only after personal consultation with the instructor, and after he has had an opportunity to examine specimens of the applicant's written work, it is desirable that candidates should write him at Columbia University before September 15, submitting written matter of not less than five hundred words and a somewhat detailed account of their previous training.

**English e1a-2a—English composition.** Advanced course. Lectures, themes and theme criticism. Credit I, IV. 1½ points each Session. Dr. S. L. WOLFF  
11 a. m.—12:15 p. m., Saturday. Room 611 Journalism. Fee \$12 each Session

Open to students who have passed English A with high standing or to special students of maturity. This course presumes a knowledge of formal rhetoric and training in the essentials of composition, correctness and precision. From two to four pages of manuscript (250-500 words) are required each week.

**English e1b-2b—The short story.** Theory of fiction writing. Lectures, themes, and criticism. 4 points each Session. Fee \$32 each Session. Misses HELEN R. HULL and SHIRLEY V. LONG

Section 1—3:10-4:25 p. m., Monday. Room 408 Avery

Section 2—7-8:15 p. m., Monday. Room 611 Journalism

Section 3—4:30-5:45 p. m., Friday. Room 707 Journalism

A course for students who wish to write fiction and for those who wish to develop critical appreciation of narrative writing. A study of the essentials of narration; work upon characterization in fiction; the general necessities of the short story. Consideration of current fiction. A practical course in writing with criticism and class discussion.



**English e1g—The short story.** (English e2b repeated in the Winter Session.)  
4 points Winter Session. Miss HELEN R. HULL  
4:30-5:45 p. m., Monday. Room 603 Journalism. Fee \$32

**English e1c-2c—The short story.** Advanced course. English composition. Theory of fiction writing. 4 points each Session. Fee \$32 each Session. Dr. DOROTHY SCARBOROUGH and Miss HELEN R. HULL

Section 1—9:30-10:45 a. m., Saturday. Room 712 Journalism

Section 2—3-4:15 p. m., Wednesday. Room 603 Journalism

Section 3—8-9:15 p. m., Wednesday. Room 507 Hamilton

A continuation of English erb-2b. Story writing studied from the point of the literary critic and of the writer. Detail's of construction will be investigated and the student called upon to contrive plots. This course, which emphasizes the study of plot, is open to those who have completed or are taking Course 1b-2b. or to those who submit during the first week a sketch or story of not more than 5000 words as evidence of competency; individual conferences.

**English e1d-2d—The short story.** Second advanced course. 4 points each Session. Dr. DOROTHY SCARBOROUGH. Fee \$32 each Session

Section 1—4:30-5:45 p. m., Wednesday. Room 603 Journalism

Section 2—8-9:15 p. m., Tuesday. Room 603 Journalism

Students should consult the instructor at the regular class hour before registration. This course is open only to the following persons: those who have done promising work in English e1c-2c; those who have not completed Course e1c-2c but submit at the outset a story of merit; and those graduate students specializing in English composition who wish advanced training in theory and criticism.

**English e1f-2f—Advanced short story writing.** 6 points each Session. Professor BLANCHE C. WILLIAMS

11 a. m.-12:15 p. m., Saturday. Room 512 Journalism. Fee \$48 each Session

Lectures, written work, conferences. In order to secure admission, applicants should write to the instructor before September 15, giving a detailed account of their previous training, and submitting a story as evidence of ability to profit from the course. In most cases registration will be limited to students who have completed the preceding courses.

**English e1e-2e—Juvenile story writing.** 4 points each Session. Dr. MABEL L. ROBINSON

7-8:15 p. m., Friday. Room 601 Hamilton. Fee \$32 each Session

The course is intended for those who wish to write juvenile fiction or to deal with it from a critical or an appreciative standpoint. The work will treat of the juvenile short story, the serial, and the various types of books, nature and animal books, fairy tales, adventure books, college and school stories, and general fiction. Attention will be given to the psychology of the child and of the adolescent as a factor involved in the understanding and writing of juvenile fiction.

**English e3a-4a—Dramatic composition.** 4 points each Session. Mr. H. H. HUGHES

11:10 a. m.-12:25 p. m., Saturday. Room 507 Journalism. Fee \$32 each Session

This course is designed for students desiring to write plays. In the beginning of the course each student will be required to submit the scenario of a play to be written during the year. These scenarios will be criticized with reference to their suitability for the stage, and the

manuscripts prepared from them will be analyzed from the point of view of the dramatist. Specific technical problems will be discussed in class as they come up in the course of the work. Representative recent and current plays will be taken up and analyzed with a view to ascertaining the principles underlying their construction and the causes of their success or failure. Constant practice in plot construction and the preparation of scenarios will be given. In so far as possible the work of the course will be adapted to meet the specific requirements of the individual students.

**English e3b-4b—Advanced dramatic composition and stage work.** 6 points each Session. Miss MINOR W. LATHAM

8:20-9:35 p. m., Friday. Brinckerhoff Theater. Fee \$48 each Session

This course is devoted to practical playwriting from the point of view of actual stage presentation.

The work begins with written and acted pantomime which is carried through on the stage by members of the class to its final form as a one or three-act play. As far as possible, elementary problems of dramatic and theatrical writing are undertaken.

A finished one-act play or the first act of a three-act play is required for credit.

**English e3c-4c—Advanced dramatic composition.** 4 points each Session. Mr. H. H. HUGHES

8-9:15 p. m., Friday. Room 306 Philosophy. Fee \$32 each Session

This course is for students who have completed English e3a-4a and for those who have had experience in writing plays. Admission to the course only after individual consultation with the instructor.

**English e3d-4d—Play production.** 3 points each Session. Mrs. CLARICE V. McCAULEY

7:30-9:20 p. m., Monday and Wednesday. Room 607 Hamilton. Fee \$24 each Session

This course is designed for students interested in practical dramatic work, both from the point of view of the actor and the author. Most of the class periods will be devoted to the actual production of plays written by the students of the classes in dramatic composition. Public performances will be given, and the student will thus be enabled to watch the development of the play from the time of its first reading rehearsal to the critical moment when it must meet the test of a first-night audience.

**English e15-16—English prosody.** Elementary course. 3 points each Session. Mr. B. HOOKER

8:20-10 p. m., Thursday. Room 511 Hamilton. Fee \$24 each Session

A technical study of rhythm and meter in English verse, and of the means by which its various effects are produced; intended not only for those engaged in the composition of original verse, but also for those who desire to achieve a richer appreciation of poetry through the understanding of its technical methods. Illustrations will be drawn from contemporary work as well as from that of accepted masters; attention will be given to the character of different verse-forms, as especially suited to the expression of certain types of thought. This course will run throughout the year; no one will be admitted after the beginning of the course without passing an examination in the work already covered.

### *Oral Composition*

**English e11a-12a—Public speaking.** Credit I, IV. 2 points each Session. Fee \$16 each Session. Messrs. E. M. HALLIDAY and H. C. FRANCE

Section 1—7:30-9:10 p. m., Wednesday. Room 206 Journalism

Section 2—7:30-9:10 p. m., Friday. Room 206 Journalism

Section 3—6-7:40 p. m., Monday. Room 402 Engineering

Section 4—7:40-9:20 p. m., Monday. Room 402 Engineering

This course will deal with public address. Its aim is to give practical training to men and women of whom speaking is demanded in their profession.

Winter Session: Three-minute extemporaneous addresses on topics of current interest supplemented by drill in breathing, articulation, gesture and reading aloud.

Spring Session: Exposition, argumentation, after-dinner speaking; how to stir the emotions and move to action.

**English e11b-12b—Advanced public speaking.** 2 points each Session.  
Mr. H. C. FRANCE

5:50-7:30 p. m., Wednesday. Room 206 Journalism. Fee \$16 each Session

This course will be limited to those students who have finished the preceding course with unusually high standing and to those who have had training in public speaking elsewhere.

**English e13-14—Elementary elocution.** Credit I, IV. 2 points each Session. Fee \$16 each Session. Mrs. ESTELLE H. DAVIS

Section 1—9:10-10:50 a. m., Saturday. Room 206 Journalism

Section 2—4:10-5:50 p. m., Tuesday. Room 306 Mines

Winter Session—The mechanics of voice and speech; breathing exercises, vocal gymnastics and a practical study of English phonetics. The correction of faults in tone (nasality, throatiness, breathiness, etc.), and localisms and sluggishness in speech.

Spring Session—A study of the principles underlying good reading aloud with special reference to phrasing, inflection, and emphasis.

Drill and individual practice at each lesson.

**English e13a-14a—Advanced elocution.** 2 points each Session. Mrs. ESTELLE H. DAVIS

11 a. m.—12:40 p. m., Saturday. Room 206 Journalism. Fee \$16 each Session

Winter Session—A study of the emotional element in vocal expression with special reference to utterance, quality of voice, force, pitch, and time.

Spring Session—Practical application of the principles studied during the Winter Session to the oral presentation of types of literature such as the oration, the essay, the lyric, and dramatic narrative in prose and verse.

Prerequisite: English e13-14 or its equivalent.

**Phonetics e1-2—Phonetics and pronunciation.** 3 points each Session.  
Mr. W. TILLY

4:30-6:10 p. m., Friday. Room 603 Journalism. Fee \$24 each Session

English pronunciation will be the chief subject; French and Spanish sounds will be treated incidentally. This elementary course will be the foundation for advanced courses in English, French and Spanish. The course will be suitable for teachers and students of modern languages, oral English, elocution and singing; also for those whose business it is to correct speech defects or to train foreigners in an accurate pronunciation of English. An elementary practical knowledge of phonetics is recognized by modern linguists as the indispensable basis of all language study, whether theoretical or practical. The method of transcription employed will be that of the International Phonetic Association.

Pronunciation cannot be taught by mere imitation. The indispensable qualification for the teacher of oral English or elocution is a thorough practical knowledge on a scientific basis of the sounds of English and of certain foreign sounds. And for the teacher of modern languages a knowledge of the phonetics of the foreign language taught, but not less of English, the language of his pupils. With this phonetic qualification the native American is an infinitely better teacher of pronunciation than the unphonetic foreigner.



**Phonetics e3-4—Intermediate course.** 3 points each Session. Mr. W. TILLY

4:30-6:10 p. m., Wednesday. Room 512 Journalism. Fee \$24 each Session

English pronunciation will continue to be the chief subject. Open only to students who have had Phonetics e1-2 or equivalent instruction in this subject, or at the same time take Phonetics e1-2.

**Phonetics e5-6—Advanced course.** 3 points each Session. Mr. W. TILLY  
4:30-6:10 p. m., Tuesday. Room 512 Journalism. Fee \$24 each Session

English pronunciation will continue to be the chief subject. Only open to students who have had Phonetics e3-4 or equivalent instruction in this subject or at the same time take Phonetics e3-4.

**Phonetics e7-8—Comparative phonetics: intermediate course.** 3 points each Session. Mr. W. TILLY

11 a. m.-12:40 p. m., Saturday. Room 603 Journalism. Fee \$24 each Session

A specialized course in phonetics planned to be of practical use to teachers and students of modern languages. In the Winter Session all the fundamental sounds of French and Spanish will be carefully studied, and the practical difficulties met by teachers and students of these languages will be carefully considered. The foreign sounds will be compared with the English sounds which are apt to be substituted for them, causing foreign accent.

All foreign texts will be translated, so that students without previous knowledge of the languages can follow. These simple texts will serve as an introduction to the study of the languages on a phonetic basis.

Missionaries and members of the diplomatic and consular service will find the comparative courses useful.

**Phonetics e9-10—Comparative phonetics: advanced course.** 3 points each Session. Mr. W. TILLY

4:30-6:10 p. m., Thursday. Room 512 Journalism. Fee \$24 each Session

An advanced study of the phonetics of French, Spanish, Portuguese and other languages. Open only to students who have had Phonetics e7-8, or at the same time take Phonetics e7-8.

### *Collegiate Courses in Literature*

**English eB1-B2—Survey of English literature.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Dr. R. TAYLOR in charge of course; occasional lectures by Professors A. H. THORNDIKE, W. P. TRENT, J. B. FLETCHER, G. C. D. ODELL, J. ERSKINE, E. H. WRIGHT, F. A. PATTERSON, and others. The quiz sections will be in charge of Dr. R. TAYLOR and Mr. A. C. BABENROTH

Lecture: 3:10-4 p. m., Monday. Room 602 Hamilton

Quiz sections:

Section 1—2:45-4:25 p. m., Wednesday. Room 518 Hamilton

Section 2—2:45-4:25 p. m., Thursday. Room 601 Hamilton

Students in this course meet for one hour weekly on Mondays for lecture and two hours in one of the quiz sections mentioned above. The course is designed primarily as a survey course in English literature. It aims to acquaint the student with the most important writings of the major authors in each period of the history of English literature.



**English eB3-B4—English literature.** Lectures, themes, and conferences. Credit I, IV. 2 points each Session. Dr. S. L. WOLFF

8:45-9:35 p. m., Monday and Thursday. Room 503 Hamilton. Fee \$16 each Session

This course consists in part of the careful and appreciative study of portions of the works of Chaucer, Spenser, Milton, Pope, and Wordsworth.

**[English e17-18—Modern literature, English and foreign.**

Not given in 1920-1921. For similar course at night see Comparative Literature e7-8, Section 2.]

**English e21-22—English literature from 1780-1830.** Credit I, IV. 2 points each Session. Professor J. H. H. LYON

7:30-9:10 p. m. Wednesday. Room 503 Hamilton. Fee \$16 each Session

This course will deal with English romanticism beginning with Cowper. After tracing the first signs of revolt against eighteenth century thought and ideals, it will treat of the new spirit as it expressed itself in the works of the poets and prose writers of the early part of the nineteenth century. While the course will include the work of men not especially well known, it will aim to embrace in considerable detail the poetry of Wordsworth, Shelley, Keats, and Byron. The work will be conducted by means of lectures, assigned readings and discussions.

**English e23-24—English literature from 1830-1890.** Credit I, IV. 2 points each Session. Professor F. A. PATTERSON

4:20-6 p. m. Wednesday. Room 408 Avery. Fee \$16 each Session

A study of Victorian literature, beginning with Carlyle. In the Winter Session the work will center around Tennyson; in the Spring Session around Browning. Other poets, such as Arnold, Morris, Rossetti, and Swinburne, will be studied. The course will be conducted by means of assigned readings, and discussions.

**English e35a-36a—Shakspere.** Credit I, IV. 2 points each Session. Professor A. DE V. TASSIN

II a. m.-12:40 p. m., Saturday. Room 602 Hamilton. Fee \$16 each Session

An introduction to the study of Shakspere, the condition and character of his life and work and the technic of his plays studied from the dramatic rather than from the literary point of view.

**English e39-40—The English novel.** Credit I, IV. 2 points each Session. Dr. FLORA R. AMOS

II a. m.-12:40 p. m., Saturday. Room 605 Journalism. Fee \$16 each Session

Beginning with Samuel Richardson, the course will trace the development of the novel down to the present day, with due attention to the influence of social and economic changes. The work of the Winter Session will include the early Victorian novel; in the Spring Session it will center around Meredith and Hardy. The work of a few of the later novelists will also be considered.

The lectures will be supplemented by assigned readings, reports, and discussions.

**English e41a-42a—Contemporary dramatic literature.** 3 points each Session. Mr. H. H. HUGHES

9:30-10:50 a. m., Saturday. Room 612 Journalism. Fee \$24 each Session

In this course study is made of representative works of the leading modern dramatists from Victor Hugo to Sir Arthur Pinero. Special attention is devoted to the evolution of contemporary stagecraft. The best new plays presented during the current theater season in New York are also analyzed from the point of view of the dramatic critic. The course is especially helpful to students who desire subsequently to write plays or to write dramatic criticism; it brings the actual theater of today within the reach of academic study.

*Comparative Literature***Comparative literature e3-4—Masterpieces of European literature.**

Credit I, IV. 3 points each Session. Professor J. H. H. LYON

4:30–5:45 p. m., Tuesday and Friday. Room 407 Avery. Fee \$24 each Session

This course is designed to give students an intimate acquaintance with those works of literature which are called World Masterpieces. The method followed will be primarily according to types; but the historical importance of each work studied will be made evident. Rapid outside reading is required of books generally found in all public libraries. Lectures, discussions, and reports.

**Comparative literature e5-6—Greek and Latin literature in English translation.** Credit I, IV. 2 points each Session. Professor KATHARINE CAMPBELL REILEY and Mrs. ELLINOR TEN BROECK ENDICOTT

4:30–6:10 p. m., Monday. Room 611 Journalism. Fee \$16 each Session

The course will be devoted to the study and interpretation through English translation of the masterpieces of Greek and Latin literature and their formative influence upon European thought and letters.

**Comparative literature e7-8—Modern European literature.** Lectures, readings, and discussions. Credit I, IV. 2 points each Session. Fee \$16 each Session. Dr. DOROTHY BREWSTER

Section 1—3:10–4 p. m., Tuesday and Friday. Room 607 Hamilton

Section 2—7:25–8:15 p. m., Monday and Thursday. Room 603 Hamilton

The course will deal during the Winter Session with contemporary drama and fiction of England and France; during the Spring Session with that of Scandinavia and Germany, and especially with modern Russian fiction.

**Comparative literature e11-12—Contemporary poetry.** 2 points each Session. Miss HELEN R. HULL

3:10–4:25 p. m., Wednesday. Room 509 Hamilton. Fee \$16 each Session

This course deals with modern poetry of Europe and America. It includes a study of the development of present tendencies in poetic conceptions with some analysis of the social background of which the poetry is an expression and a study of modern poetic forms. The course is conducted by means of assigned readings, lectures, and class discussions.

*Graduate Courses*

**English e207-208—History of the English language.** Credit II. 3 points each Session. Professor G. P. KRAPP

9–10:40 a. m., Saturday. Room 610 Philosophy. Fee \$24 each Session

This course will discuss the sounds of standard English descriptively and historically.

**English e233-234—English literature in the eighteenth century.** Credit II. 3 points each Session. Professor W. P. TRENT

5:10–6 p. m., Tuesday and Thursday. Room 307 Philosophy. Fee \$24 each Session

Covers the development of English literature during the eighteenth century, more especially of the poetry. Emphasis is laid on Defoe, Swift, Pope, Thomson, Gray, Collins, Johnson, Cowper, and Burns, but attention is also paid to many minor writers.

**English e238—English literature, 1832-1880.** Credit II. 3 points Spring Session. Professor A. H. THORNDIKE

5:10–6 p. m., Monday and Wednesday. Room 307 Philosophy. Fee \$24

Especial attention will be paid to the early Victorian writers and to the relations of literature and the age of industrialism.

*Courses for Non-English Speaking Students*

**English eV1-V2—The elements of the English language with instruction in speaking, reading, and writing.** 2 points each Session. Fee \$16 each Session. Misses HELEN E. DILLER and MARGARET B. GROSE

Section 1—5-5:50 p. m., Wednesday and Friday. Room 601 Hamilton

Section 2—8:20-9:10 p. m., Monday and Thursday. Room 601 Hamilton

This course is intended principally for educated foreigners who have some knowledge of the English language. Students study elementary principles of English grammar and make brief oral reports on assigned topics. Conversation and reading aloud, with special attention to pronunciation, form a part of every lesson. Some writing and correction are done in class, and one written theme is expected weekly. Phonetics considered in each lesson.

**English eV3-V4—Elementary English grammar.** 3 points each Session. Miss HELEN E. DILLER

2:00-3:10 p. m., Tuesday and Friday. Room 611 Journalism. Fee \$24 each Session

A course in the essentials of English grammar intended to assist educated foreigners in acquiring a working knowledge of the English language. This course is correlated with other courses mentioned in this group and should be elected by all students wishing to learn English rapidly and accurately.

**English eV5-V6—Elementary English composition.** 3 points each Session. Miss SARA MERRILL

1:45-3 p. m., Monday and Thursday. Room 611 Journalism. Fee \$24 each Session

A course in writing English, emphasizing the structure of sentences, order of words and the building of a paragraph.

**English eV7-V8—Oral composition and conversation.** 3 points each Session. Miss MARGARET B. GROSE

11 a. m.-12 m., Monday, Wednesday, and Thursday. Room 302 Philosophy. Fee \$24 each Session

A course in speaking English with constant individual practice.

**English eV9-V10—English spelling and vocabulary making.** 2 points each Session. Miss MARGARET B. GROSE

10-11 a. m., Monday and Wednesday. Room 308 Philosophy. Fee \$16 each Session

A course designed to teach educated foreigners the peculiarities of English spelling and to aid them in acquiring rapidly a vocabulary.

**English eV11-V12—Phonetics for non-English speaking students.** 2 points each Session. Mr. W. TILLY

3-4 p. m., Wednesday and Friday. Room 512 Journalism. Fee \$16 each Session

Designed to be of practical assistance to foreign students. A study of the scientific principles underlying the mastery of the English language.

*Preparatory Courses*

**English eW1—English grammar.** 3 points Winter Session. Fee \$24. Messrs. D. B. DUNCAN, M. M. HOOVER, J. C. TRESSLER, and Mrs. EDNA H. CHARLSEN



Section 1—1:45-3, Monday and Thursday. Room 612 Journalism

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 511 Journalism

Section 3—7-8:15 p. m., Monday and Thursday. Room 612 Journalism

Section 4—7-8:15 p. m., Tuesday and Friday. Room 402 Engineering

Section 5—8:20-9:35 p. m., Monday and Thursday. Room 612 Journalism

This course is intended for mature students who desire to acquire a thorough knowledge of the elementary principles of English grammar. After a rapid review of the parts of speech and their modifications, a detailed treatment of word elements, phrase elements, and clause elements and their relations in sentences will be given. Much time will be devoted to the analysis and synthesis of different types of sentences. Written work will be required for each session. Punctuation will be regarded as a system of points to denote grammatical relations, and thus considerable attention will be given to this subject.

This course is recognized as a credit course for promotion licenses by the Board of Education. Students will be expected to confer regularly with the instructor at such times as he may designate.

Students who contemplate taking college entrance English, either English eX1-X2 or eY1-Y2, should have completed this course or its equivalent.

Text-book: Blount and Northrup's *Elementary English Grammar*.

**English eW2—English composition.** 3 points Spring Session. Fee \$24. Messrs. D. B. DUNCAN, M. M. HOOVER, J. C. TRESSLER, and Mrs. E. H. CHARLSEN

Section 1—1:45-3:00 p. m., Monday and Thursday

Section 2—7:00-8:15 p. m., Monday and Thursday

Section 3—8:20-9:35 p. m., Monday and Thursday

Section 4—7-8:15 p. m., Tuesday and Friday

An elementary course in English composition especially planned for those who wish to gain power in writing through practice. The rhetorical essentials of narration, description, exposition, and argumentation will be discussed. Composition subjects will be drawn from the students' own experiences and from contemporary life rather than from literature. Weekly themes will be required, and by means of these the students are expected to master, so far as time permits, the technique of simple prose expression.

Students will be required to consult regularly with the instructor at such times as he may designate. This course, with the first half year, English eW1, furnishes preparation for English eX1-X2 and English eY1-Y2.

Text-books: Woolley's *Handbook of Composition* and Brook's *English Composition*, Book II.

**English eW4—English grammar.** 3 points Spring Session. Fee \$24. Mr. D. B. DUNCAN and Mrs. E. H. CHARLSEN

Section 1—7-8:15 p. m., Monday and Thursday

Section 2—8:20-9:35 p. m., Monday and Thursday

Course eW1 repeated in the Spring Session.

**English eW5—English composition.** 3 points Winter Session. Fee \$24. Mr. D. B. DUNCAN

Section 1—8:20-9:35 p. m., Monday and Thursday. Room 509 Hamilton

Section 2—7-8:15 p. m., Monday and Thursday. Room 509 Hamilton

Course eW2 given in the Winter Session.

**English eX1-X2—English composition and literary readings.** Reading of classics, lectures, oral reports, class discussions, compositions, and written tests. 3 points each Session. Fee \$24 each Session. Messrs. D. B. DUNCAN, M. M. HOOVER, J. C. TRESSLER, and Mrs. E. H. CHARLSEN



Section 1—1:45-3 p. m., Monday and Thursday. Room 603 Journalism

Section 2—1:45-3 p. m., Wednesday and Friday. Room 612 Journalism

Section 3—8:20-9:35 p. m., Tuesday and Friday. Room 402 Engineering

Section 4—8:20-9:35 p. m., Monday and Thursday. Room 603 Journalism

This course is planned to give students an appreciation of literature and facility in composition. The work done will be in actual sequence to that done in English eW1 and English eW2. In addition to the reading of masterpieces in prose and poetry, considerable attention will be given to the planning of compositions and to theme writing. The masterpieces studied will be analyzed in such a way as to show how to read and how to use these masterpieces to develop power in composition writing. The course will meet the needs of people who, while not desiring credit for entrance to college, desire guidance in reading, speaking, and writing. The successful completion of this course will count, in part, toward the removal of entrance conditions in English 1 and English 2. Students will be required to confer regularly with the instructor at such times as he may designate.

Prerequisite: A knowledge of elementary English grammar such as may be acquired in English eW1 or English eW4.

Text-books: Woolley's *Handbook of Composition* and ten classics selected from the list prescribed by the Committee on Uniform Entrance Requirements.

**English eY1-Y2—Literature and composition.** Themes, lectures, class discussion, and tests. 3 points each Session. Fee \$24 each Session. Messrs. D. B. DUNCAN and M. M. HOOVER

Section 1—3:10-4:25 p. m., Tuesday and Friday. Room 603 Journalism

Section 2—8:20-9:45 p. m., Tuesday and Friday. Room 410 Mines

This course is planned for three classes of people: (1) those who wish to gain adequate preparation for various college courses in English; (2) mature people who wish to gain accuracy in expression, power in writing, and general culture; and (3) students who wish to prepare themselves to pass the examinations of the College Entrance Examination Board.

The work will consist of a detailed study of four classics, a survey of English literature, and the preparation of many outlines and themes. Emphasis will be laid upon adequacy of information and accuracy of expression. The completion of this course with a grade of B will remove entrance conditions in English 2 in Columbia College. Students will be required to confer regularly with the instructor at such times as he may designate. Students already registered in this course who show obvious inability to carry the work will be transferred to Course eX1-X2.

Prerequisite: eX1-X2 or its equivalent (three years of high school English).

Text-books: Woolley's *Handbook of Composition*, Long's *English Literature* Mitchell and Carpenter's *Exposition in School-Room Practice*, and four classics selected from the list prescribed by the Committee on Uniform Entrance Requirements.

**English eZ1-Z2—English spelling and vocabulary.** 1 point each Session. Fee \$8 each Session. Messrs. D. B. DUNCAN and M. M. HOOVER

Section 1—9-9:50 a. m., Monday and Wednesday. Room 512 Journalism

Section 2—4:30-5:20 p. m., Wednesday and Friday. Room 612 Journalism

Section 3—6:10-7 p. m., Monday and Thursday. Room 612 Journalism

This course is designed for mature students who spell badly. An effort will be made to teach spelling through the threefold appeal to the eye, the ear, and the touch. While considerable time will be devoted to phonics, syllabication and rules of orthography, much more time will be given to actual spelling. The aim will be to discover and correct the deficiencies of the individual student. Attention will be given to words in common use and words commonly misspelled rather than to unfamiliar and technical words. Each student will be required to keep an alphabetical list of all words he misspells.

Text-book: Eldridge's *Business Speller and Vocabulary*

**Business English e1-2—Business English and commercial correspondence.** 3 points each Session. Fee \$24 each Session. Messrs. D. B. DUNCAN and P. T. WARD

Section 1—2-3 p. m., Tuesday and Friday. Room 507 Journalism

Section 2—7:30-9:20 p. m., Monday. Room 512 Journalism

Section 3—7:30-9:20 p. m., Tuesday. Room 206 Journalism

Section 4—7:30-9:20 p. m., Wednesday. Room 612 Journalism

Section 5—7:30-9:20 p. m., Thursday. Room 206 Journalism

This course is intended for office assistants, private secretaries, and those who wish to become proficient in effective business communication. The aim is to teach how to use words in such a way as to make people act. The principles of literary composition will be applied to commercial correspondence. Business situations will be analyzed, letters classified into type forms, and the requisites of each class will be exemplified by many models. The psychology of advertising and the sales letter will be analyzed, and principles derived from this analysis will be applied in actual practice. The course will be not merely theoretical, but practical. Every student will be required to write several letters each week, and no one who has not sufficient time for such written work should take this course.

Special consideration will be given to letters of application, letters of complaint, sales letters, follow-up letters, and collection letters.

A prerequisite to this course is a knowledge of the principles of elementary English grammar.

**Business English e4—Business English and commercial correspondence.** 3 points Spring Session. Dr. R. TAYLOR

7:30-9:20 p. m., Wednesday. Fee \$24

A course for beginners.

**Business English e5—Business English and commercial correspondence.** 3 points Winter Session. Dr. R. TAYLOR

7:30-9:20 p. m., Wednesday. Room 603 Journalism. Fee \$24

Identical with Business English e2, but given in the Winter Session.

A continuation of Business English e4. A course for advanced students.

## FILING

**Filing e21—Indexing, filing, and cataloguing as applied in business.**

2 points Winter Session. Miss URSULA K. JOHNSTONE

7:45-9:45 p. m., Thursday. Room 605 Journalism. Fee \$16

Lectures and practice. A course in indexing and filing correspondence, clippings, pamphlets, etc. The application of library methods, card and classification systems, especially the Dewey Decimal system, to records in business offices and special libraries, commercial houses, banks and corporations.

**Filing e22—Indexing, filing and cataloguing as applied in business.**

2 points Spring Session. Miss URSULA K. JOHNSTONE

7:45-9:45 p. m., Thursday. Fee \$16

## FINE ARTS

**Architecture e21-22—History of ancient architecture.** Credit IV, V. 2 points each Session. Mr. W. B. DINSMOOR

6-6:50 p. m., Tuesday and Thursday. Room 408 Avery. Fee \$16 each Session

Ancient architecture of Egypt, Assyria, Persia, Judea, Greece, and Rome; historical analysis and critical discussion.

**[Architecture e23-24—History of medieval and Oriental architecture.**  
Will not be given in 1920-1921; will be given in 1921-1922]

**Architecture e25-26—Renaissance and modern architecture.** Credit V. 2 points each Session. Mr. W. B. DINSMOOR

7-7:50 p. m., Tuesday and Thursday. Room 407 Avery. Fee \$16 each Session

Architecture of the Renaissance in Italy, France, Germany, Spain, the Low Countries, and England; architecture of the nineteenth century in Europe; American architecture; modern and contemporary development.

**Architecture e31-32—Ancient ornament.** Credit I, V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Friday. Room 407 Avery. Fee \$16 each Session

General classifications; origins, primitive and savage ornament; the historic ornament of Egypt, Assyria, Persia, Greece, and Rome, including Ægean, Cypriote, Phœnician and Etruscan ornament; the development of the styles, the common motives and patterns of both architectural ornament and the minor arts. Periodic drawings.

**[Architecture e33-34—Medieval ornament.**

Will not be given in 1920-1921; will be offered in 1921-1922]

**Architecture e35-36—Modern ornament.** Credit V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Monday. Room 407 Avery. Fee \$16 each Session

Ornament of the Renaissance in Italy, France, Germany, Spain, the Netherlands, and England; American colonial ornament; developments of the nineteenth century in Europe and America; modern phases and tendencies.

**Fine arts e51a—The art of the Metropolitan Museum—sculpture and the decorative arts.** A study of the originals in the Museum. 2 points Winter Session. Fee \$16. No University fee. Dr. G. KRIEHN

Section 1—2:30-4:10 p. m., Friday. Metropolitan Museum

Section 2—10:30-12:10 p. m., Saturday. Metropolitan Museum

Section 3—3:15-4:55 p. m., Saturday. Metropolitan Museum. Begins October 9

Section 4—10:30 a. m.-12:10 p. m., Monday. Metropolitan Museum. Begins October 18

Section 4 will be given only if the other sections are filled

This course, combined with Fine arts e52a, offers a year's systematic study of the most important art objects in the Metropolitan Museum. It is an introductory course, designed to teach the appreciation of sculpture and the decorative arts, as practised in the great historic styles, and to outline briefly their history. Among the subjects treated, besides sculpture proper, will be ivories, enamels, ceramics, small bronzes, terracottas, furniture, tapestries and other decorative arts. Opportunities for the study of these subjects, rivaled only by the best European collections, are offered in the recently opened galleries of classical art, the new Pierpont Morgan memorial wing of decorative arts, the galleries of Egyptian art, the collection of Rodin sculptures, and in other departments. Special attention will be devoted to the needs of teachers and university students, for whom Section 2 is designed.

**Fine arts e52a—The art of the Metropolitan Museum—the paintings.** A study of the originals in the Museum. 2 points Spring Session. Fee \$16. No University fee. Dr. G. KRIEHN



Section 1—2:30-4:10 p. m., Friday. Metropolitan Museum

Section 2—10:30 a. m.—12:10 p. m., Saturday. Metropolitan Museum

Section 3—8:15-9:55 p. m., Saturday. Metropolitan Museum. If the Museum is closed Saturday evenings, Section 3 will meet Saturday, 3:15-4:55 p. m.

Section 4—10:30 a. m.—12:10 p. m., Monday. Metropolitan Museum. Begins February 14

Section 4 will be given only if the other sections are filled

Planned for all who wish to learn how to judge and enjoy painting. A continuation of the preceding course, but may be taken independently. While special attention will be given to the technical qualities of painting, its content will not be neglected. Each Session will be devoted to a school or to individual masters of painting; but the treatment will be in historic sequence, thus outlining the history of painting. Among the topics treated are Italian painting, both primitive and developed; the early Netherlandish and German schools; Flemish and Spanish masters; Dutch painting, with special emphasis on Rembrandt (Altman collection); the old English masters; French painting with emphasis on the Barbizon school; modern European painting; American painting, both early and contemporary. Students, teachers, and others wishing to take the examination should enrol, if possible in Section 2, which is designed especially for them.

**Fine arts e53-54—Outlines of art history.** 2 points each Session. Dr. G. KRIEHN

3-4:30 p. m., Monday. Metropolitan Museum. Fee \$16 each Session. No University fee. Begins October 11

A general course, treating the great epochs of art in the western world from the appreciative as well as the historic point of view. The chief subjects are painting, sculpture, and architecture, with emphasis on that phase in which the age or people found its highest expression; on sculpture, for example, in ancient Greece; architecture and decoration during the Roman and medieval epochs; on the painting and sculpture of the Renaissance, and on painting during the modern period. There will be special lectures on the great masters in whose works art culminated, such as: Michelangelo, Raphael and Titian in Italy, Rubens and Van Dyck in Flanders, Hals and Rembrandt in Holland, Velazquez in Spain, and Rodin in France. During the nineteenth century, the emphasis will be placed on the painting of France and the United States. A full syllabus will be distributed, and the lectures will be illustrated with the stereopticon. Use will be made of the important Museum Library, with its fine collection of reproductions of the great masters.

**For courses in Hellenistic and Early Roman Archaeology and Roman Archaeology of the Empire, see Latin 149 and 150, pp. 88, 89; in Greek Art and Archaeology, see Greek 149, p. 82**

## GEOGRAPHY

**Geography e25—Physical geography of the atmosphere and oceans.** Lectures and laboratory work. Credit I, IV. 2 points Winter Session Mr. E. M. LEHNERTS

8:20-10 p. m., Monday. Room 401 Schermerhorn. Fee \$16

The first part of this course consists of an introductory discussion of the earth as a globe; latitude, longitude, and time; methods of map projection; the geographic effects of the earth's rotation and revolution and of terrestrial magnetism. The major part of the time is devoted to consideration of the constitution, temperature, and pressure of the atmosphere; weather predictions and the making of weather maps; climatic provinces. In connection with the ocean the following topics will be considered: The composition and temperatures of ocean water; ocean currents and their effects on navigation, climate, and the distribution of food



fishes; tides and their influence on harbors, navigation, and sewage disposal; wave action and its effect on shores and harbors.

Special attention will be paid to the needs of those engaged in, or looking forward to, the teaching of elementary physical geography.

**Geography e26—Physical geography of the lands.** Lectures and laboratory work. Credit I, IV. 2 points Spring Session. Mr. E. M. LEHNERTS  
8:20–10 p. m., Monday. Fee \$16

This course deals primarily with the origin and evolution of the surface features of the earth. The chief topics considered are: The work of rivers, glaciers, waves, and winds, and the evolution of the forms which they produce; the different types of plains, plateaus, mountains and volcanoes, and their stages of development under stream erosion; the representation of land forms by topographic maps, block diagrams and other methods of illustration.

As in Physical geography e25, special attention will be given to the needs of those members of the class who are engaged in, or looking forward to, the teaching of elementary physical geography.

**Business e11-12—Economic geography.** 2 points each Session. Fee \$16 each Session. Messrs. J. E. ORCHARD and A. H. STOCKDER

Section 1—4:30–6:10 p. m., Monday. Room 507 Journalism

Section 2—7:40–9:30 p. m., Monday. Room 517 Hamilton

An introductory but non-technical course designed as part of a liberal education. Lays the foundation of further study of economic geography; explains some environmental factors that influence man's economic and social development.

## GEOLOGY

**Geology e1—General geology.** A general introduction to the subject of geology. Lectures and laboratory work. Credit I, IV. 3 points Winter Session. Mr. F. K. MORRIS

8:20–10 p. m., Tuesday and Friday. Room 401 Schermerhorn. Fee \$24

This course covers an introduction to the common rocks, their structure, origin, and occurrence in nature; rock weathering and its products, geological activities of the air; the streams and the sea; characteristics and work of glaciers, volcanoes, and earthquakes.

The laboratory work consists of a study and identification of common rocks, drawing of profiles and structure sections, interpretation of topographical maps, etc. There will be several field trips on Saturday afternoons.

No prerequisite. Equivalent to Geology 1 in Columbia College. A knowledge of elementary chemistry is desirable.

Text-book: Chamberlin and Salisbury, *College Geology*.

**Geology e2—Historical geology.** The origin of the earth and its development—succession of plant and animal life. Lectures and laboratory. Credit I, IV. 3 points Spring Session. Dr. J. J. GALLOWAY

8:20–10 p. m., Tuesday and Friday. Fee \$24

This course deals with the origin of continents and ocean basins and their development during successive geologic periods, characteristic sections and their interpretations, study of important types of fossils as indication of geologic age; the glacial period and the antiquity of man; development of surface features or physiography.

The laboratory work consists of the study of maps, the making of sections, and the identification of fossils, followed by work with physiographic models. There will be several excursions on Saturday afternoons in the spring.

Prerequisite: Geology 1 or Geology e1 or sr.

Text-books: Chamberlin and Salisbury, *College Geology*; Grabau, *Syllabus of Historical Geology*; Pirsson and Schuchert, *Geology*.

**Geology e3—Lithology.** An introduction to the study of rock-forming minerals and rocks. Demonstration lectures and laboratory work. Credit I, IV. 3 points Winter Session. Mr. R. J. COLONY  
7-8:15 p. m., Tuesday and Friday. Room 402 Schermerhorn. Fee \$24

The methods of determining minerals, especially rock-forming minerals; classification of rocks; laboratory practice with both minerals and rocks. The object is to attain facility in sight recognition and discrimination of these natural products, and mastering hand specimen determination and classification.

Text-book: Kemp's *Handbook of Rocks*.

**Geology e4—Elementary petrography.** An introduction to the study of rocks, from thin sections, with the microscope. Laboratory demonstration method of work. Credit I, V. 3 points Spring Session. Mr. R. J. COLONY  
6:30-8:10 p. m., Tuesday and Friday. Fee \$24

Methods of mineral identification; structural differences and classification of rocks. A standard set of fifty rocks is used as the basis of this course and particular attention is given to forms of description.

Text-books: Luquer's *Minerals in Rock Sections* and Harker's *Petrology*.

**Geology e18—Block diagrams, structural illustrations and physiographic field sketching.** Credit I, IV. 2 points Spring Session. Mr. F. K. MORRIS

One evening per week. Hour to be arranged. Fee \$16

The course is scientific, not artistic; skill in drawing is valuable, but not prerequisite; students will be trained to draw ideal land forms rapidly and easily; to render a topographic map into a perspective landscape diagram that correctly represents the salient physiographic features of the region; and to render a geologic map into a diagram that shows the structure and history of the region. When weather permits, the class will be offered field work in physiographic field-sketching.

The block diagram and field-sketch are of recognized and growing importance both in the teaching of geography and physiography and field and underground work in both structural and economic geology.

Prerequisite: Geology 1 and 19 or their equivalents.

**Geology e36—Meteorology and climatology.** Two lectures per week. Credit I, IV. 3 points Spring Session. Mr. E. M. LEHNERTS  
7-8:15 p. m., Monday and Thursday. Fee \$24

The course is intended to include the principles of meteorology and the chief factors in the making of different climates with their effects on general development and human progress. Special attention will be given to the causes of weather change and the rules of forecasting.

**[Geology e55—Features of American National Parks.** Two lectures per week. Credit I, IV. 3 points Winter Session. Fee \$24. Not given in 1920-1921. To be offered in 1921-1922.]

A course in regional geography and physiography designed to disseminate a knowledge and understanding of the American National Parks: their location, area, scenery, climate, fauna and flora, accessibility, reasons for their preservation, and value to the nation.

The course is especially concerned with interpretation of the land forms of American scenery, as exemplified in these regions where they have attained their most attractive and instructive development. This training will enable the student to comprehend and appreciate not only the scenic wonders of our National Parks: but also the features of his home surroundings or those seen in his travels in other lands.

## GERMAN

**German eA1-A2—Elementary course.** Credit I, IV. 4 points each Session. Fee \$32 each Session

Section 1—4:30–5:55 p. m., Tuesday, Wednesday, and Friday. Room 402 Hamilton. Mr. M. G. BACH

*Section 2 limited to men matriculated in Columbia College.*

Section 2—12 m.–12:50 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 408 Hamilton. Mr. O. P. SCHINNERER

This course familiarizes the beginner with the common vocabulary and the fundamental grammatical facts of the language so as to enable him to read easy German at sight. Reading forms part of the work from the beginning, together with grammar study, easy exercises in composition, and a considerable amount of colloquial practice in the phrases of everyday life. Although this course is intended for beginners it may be taken with profit by those who have some previous knowledge of the language, but are deficient in grammar. Students entering in February should take Course eA8. For Course eA1 no previous knowledge of German is required.

The entire course completes the college entrance requirement (*a* and *x*) in elementary German.

**German eA8—Elementary course.** Credit I, IV. 4 points Spring Session. Mr. J. B. EYSTER

4:30–5:55 p. m., Tuesday, Wednesday, and Friday. Fee \$32

Equivalent to German eA1, but given in the Spring Session for students who enter at that time. This course should be followed by German sA2 in the Summer Session (equivalent to German eA2). For description see German eA1-A2 above.

**German eB1-B2—Intermediate course.** Credit I, IV. 4 points each Session. Mr. F. WENNER

4:30–5:55 p. m., Monday, Wednesday, and Thursday. Room 408 Hamilton. Fee \$32 each Session

This course is intended for students who have satisfied the college entrance requirement in elementary German or have taken Course eA1-A2 or an equivalent. Course eB2 completes the requirement in intermediate German (*b* and *y*) for college entrance or for a degree.

The work of this course includes the reading (partly at sight), of moderately difficult prose and verse by standard modern and classical authors; grammatical instruction, beginning with a rapid review of the elements and embracing the fundamental principles of syntax and word-formation; exercises in composition and free reproduction, oral and written, with considerable colloquial practice. The texts studied will be selected with reference to variety of style and vocabulary and will include Freytag's *Die Journalisten*, Heine's *Harzreise*, and Schiller's *Wilhelm Tell*.

Prerequisite: Elementary entrance, German eA2 or an equivalent.

**German eB4—Intermediate course.** Credit I, IV. 4 points Spring Session. Mr. L. A. SHEARS

4:30–5:55 p. m., Monday, Wednesday, and Thursday. Fee \$32

Equivalent to German eB1, but given in the Spring Session.

**German eB5—Intermediate course.** Credit I, IV. 4 points Winter Session. Mr. L. A. SHEARS

4:30–5:55 p. m., Monday, Wednesday, and Thursday. Room 406 Hamilton. Fee \$32

Students completing this course with a mark of A or B may enter German eJ2 or German eE2.

Equivalent to German eB2, but given in the Winter Session.



**German eE1-E2—Readings in science.** Credit I. 3 points each Session.

Professor H. H. L. SCHULZE

4:30-5:45 p. m., Monday and Thursday. Room 402 Hamilton. Fee \$24 each Session

This course is designed to enable the student to read difficult German with facility, in order that he may consult technical journals and works of reference in that language in connection with his later professional studies.

Prerequisite: Intermediate entrance, eB2 or eB4, with a grade of A or B.

**German eE4—Readings in science.** Credit I. 3 points Spring Session.

Mr. O. P. SCHINNERER

4:30-5:45 p. m., Monday and Thursday. Fee \$24

Equivalent to German eE1, of the Winter Session.

**German eE5—Readings in science.** Credit I. 3 points Winter Session

Mr. L. A. SHEARS

4:30-5:45 p. m., Tuesday and Friday. Room 408 Hamilton. Fee \$24.

Equivalent to course eE2 of the Spring Session (for description, see above).

Prerequisite as for Course eE2.

**German eJ1-J2—Readings in newspapers and magazines.** Credit I, IV.

3 points each Session. Dr. G. A. BETZ

4:30-5:45 p. m., Tuesday and Friday. Room 406 Hamilton. Fee \$24 each Session

This course is intended for students who look forward to entering the School of Journalism; also for those who wish to acquire facility in reading as preparation for using the language in the study of history, economics or politics rather than as an introduction to the study of German or other literature (see German e5a-6a). The work includes a review of German syntax, with some practice in writing and speaking (see also German e11-12).

Prerequisite: Intermediate entrance, German eB2, or an equivalent.

**German e5a-6a—Introduction to the classics.** Selected works of Goethe,

Schiller, and Lessing. Credit I, IV. 3 points each Session. Professor F. W. J. HEUSER

4:30-6:10 p. m., Wednesday, Room 509 Hamilton. Fee \$24 each Session

This course aims to make the student familiar with representative works of the classical period and the outlines of its history, and to increase the student's command of vocabulary and idiom by means of supplementary sight reading and by interpretation of the text without the medium of translation.

The course will include the reading and study of selected dramas of Lessing, Goethe, and Schiller, with brief discussion of other works in connection with assigned private reading. As the course affords but little practice in speaking and writing German, it is recommended that Course e11-12 be taken in connection with it.

Prerequisite: Course eB2, or an equivalent.

Text-books required at the beginning: Lessing's *Emilia Galotti*, edited by Winkler (Heath); Rolleston's *Life of Lessing*, published in the 'Great Writers' series (Walter Scott, London).

**German e11-12—German writing and speaking.** Credit I, IV. 2 points

each Session. Professor W. A. BRAUN

10:50 a. m.-12:30 p. m., Saturday. Room 508 Philosophy. Fee \$16 each Session

An advanced practice course, but with a distinctly literary content. It presupposes a good reading knowledge and fair ability to understand the spoken language. This course will be



conducted wholly in German. The conversation will be upon topics chosen from the field of literature, daily life, and current events. The composition work will consist in the rendering of outlines of the literature read and in the preparation of original themes.

**Business eb91-92—Commercial German.** Credit IX. 4 points each Session. Dr. E. W. ROESSLER

3:10-4 p. m., Monday, Tuesday, Thursday and Friday. Room 611 Journalism. Fee \$32 each Session

The course is intended primarily to train the student in oral business intercourse and in reading and writing German business letters. A thorough study will also be made of Germany's commercial methods, as well as of the past commercial relations between the United States and Germany. A study of the commercial geography of Germany, of the German export policy and of related subjects will be features of the course.

Prerequisite: German B in Columbia College or equivalent.

**German e103-104—Goethe's Faust; first and second parts.** Credit II. 3 points each Session. Professor W. A. BRAUN

9-10:40 a. m., Saturday. Room 508 Philosophy. Fee \$24 each Session

This course, intended for the enjoyment of Faust as poetry, consists of the reading and interpretation, by lectures and discussions, of the entire poem, with a few unimportant omissions. Attention is given to the genesis and its significance in the study of Goethe's life and works, and to its ethical import and artistic character as a whole.

Prerequisite: German e5a-6a or an equivalent reading knowledge of German.

Students will require for this course Goethe's Faust, First and Second parts, 2 vols., edited by Calvin Thomas (Heath).

**Properly qualified Extension students will also be admitted to the following courses:**

**German 105—German literature in the first half of the nineteenth century;** from the rise of the Romantic School to the revolution of 1848. Credit II. 3 points Winter Session. Professor R. H. FIFE

4:10-5 p. m., Tuesday and Thursday. Room 514 Philosophy. Fee \$24

**German 106—German literature in the second half of the nineteenth century.** Credit II. 3 points Spring Session. Professor F. W. J. HEUSER

4:10-5 p. m., Tuesday and Thursday. Fee \$24

**German 112—Richard Wagner, thinker and artist.** Credit II. 3 points Spring Session. Professor A. F. J. REMY

5:10 p. m., Tuesday and Thursday. Room 514 Philosophy. Fee \$24

Lectures on Wagner with reference, chiefly, to his artistic methods and theories, his philosophy, and his use of medieval legend. May be taken by students of music or of literature who are unacquainted with the German language.

**For a course in Linguistics, see p. 90**

## GOVERNMENT AND PUBLIC LAW

### *Government*

**Government e1-2—American government.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Dr. R. S. BOOTS and Mr. E. D. GRAPER

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 511 Hamilton

Section 2—7-8:15 p. m., Monday and Thursday. Room 511 Hamilton

A general survey of the whole field, based largely on Beard's *American Government and Politics* (edition of 1914) and designed both for those who wish to teach the subject in the schools and for those who wish to gain an insight into the responsibilities of citizenship. Attention will be confined to national government in the Winter Session; to state, municipal, and local government in the Spring Session. Government e2 is open only to those who have had e1.

Equivalent to Government 1-2 in Columbia College.

**Government e4—American government.** Credit I, IV. 3 points Spring Session. Fee \$24. Professor R. D. LEIGH

Section 1—3:10-4:25 p. m., Monday and Thursday

Section 2—7-8:15 p. m., Monday and Thursday

Equivalent to Government e1, but given in the Spring Session.

**Government e5—American government.** Credit I, IV. 3 points Winter Session. Professor R. D. LEIGH

3:10-4:25 p. m., Tuesday and Friday. Room 516 Hamilton. Fee \$24

Equivalent to Government e2, but given in the Winter Session.

**Government e7—The administration of New York City.** Credit IV. 2 points Winter Session. Dr. A. E. PETERSON

11 a. m.—12:40 p. m., Saturday. Room 707 Journalism. Fee \$16

A study of the present government of New York City, with particular attention to functions; designed especially for those who contemplate teaching civics or related subjects in the local schools.

**Government e8a—The administration of New York City.** Credit IV. (Government e7 repeated in the Spring Session.) 2 points Spring Session. Dr. A. E. PETERSON

11 a. m.—12:40 p. m., Saturday. Fee \$16.

**Government e12—The civil service.** 2 points Spring Session. Dr. W. E. MOSHER

7:40-9:30 p. m., Friday. Fee \$16

Designed to give students in the secretarial courses, and others, who are interested in the opportunities in governmental employment, an understanding of the character of the civil service of national, state and local governments and of the problems involved in its development. The course is not, of course, intended to help students in preparing for any particular examinations.

**Government e22—Governmental regulation of commerce and industry.** 2 points Spring Session. Credit I, IX. Mr. A. W. MACMAHON

8:00-9:40 p. m., Wednesday. Fee \$16

A study of the existing national and state legislation which attempts to control commerce and industry, and of the administrative devices by which it is enforced.

**Government e119—Present-day party issues and methods.** Credit II. 3 points Winter Session. Mr. A. W. MACMAHON

8-9:40 p. m., Wednesday. Room 516 Hamilton. Fee \$24

This course deals with the political activity of the outstanding social groups in the American population.

**Government e121—Problems of public administration.** Credit I, II.  
3 points Winter Session. Mr. L. H. GULICK

4:10-6:00 p. m., Wednesday. Room 511 Hamilton. Fee \$24

This course is given from the standpoint of the executive, emphasis being laid upon the technique and standards of public administration. It treats budget making, purchasing, personnel management, accounting control, taxation, the management of public institutions, the promotion of public health, the construction and maintenance of public works, and the administration of public safety from this point of view.

**Government e124—Problems of municipal finance.** Credit II. 3 points  
Spring Session. Mr. L. H. GULICK

4:10-6:00 p. m., Wednesday. Fee \$24

This intensive course is for those who plan entering civic or public service and for teachers of government. It deals with such problems as: the assessment of property for municipal taxation, special assessments, city budgets, bonding, the collection of taxes, the audit of accounts, salary policies, the purchase of supplies, and municipal pensions. A number of field trips will be arranged for qualified students.

### *Public Law*

**Public law e101-102—History and growth of international relations.**  
Lecture-study course. Credit II. 3 points each Session. Mr. H. F. MUNRO

7:40-9:20 p. m., Monday. Room 614 Kent. Fee \$24 each Session

Introductory—historical: A brief consideration of the history of international relations and earlier forms of internationalism; Roman law; the Christian Church; the Holy Roman Empire; feudalism; the formation of national states.

Study of national policies: *Status quo*; balance of power; concert of Europe; open door; Monroe Doctrine; imperialism.

Problems of international peace: Nationality; races; protection and free trade; armament; proposals for world peace.

World organization: Hague conferences; courts of arbitration; international unions; private international associations; the world's financial organization; the League of Nations.

International law and diplomacy: The principles of international law as derived from the practice of independent states are studied from the point of view of fundamental law of the world which constitutes the basis of our international society. Diplomacy is studied as a means to secure the recognition of international law and the protection of national interests and policies.

**Public law e103-104—Principles and practice of international law.**  
Lecture-study course. Credit II, IV. 3 points each Session. Mr. H. F. MUNRO

4:30-6:10 p. m., Tuesday. Room 403 Avery. Fee \$24 each Session

This course begins with a brief introductory examination of the basic principles of international law relating to war, peace, and neutrality. Application of principles to selected cases. Critical examination of current questions arising in the international relations of the United States and other countries. Especial emphasis is laid upon the practice of arbitration and the possibilities of its wider extension.

Text-book: Stowell and Munro's *International Cases*, with parallel readings in various text-books.

No previous knowledge of law is required.

**Public law e119-120—Modern European and American diplomacy.**  
Credit II, IV. 3 points each Session. Mr. H. F. MUNRO

7:40-9:20 p. m., Wednesday. Room 614 Kent. Fee \$24 each Session

Fundamentals of world politics. The European concert and the balance of power. Alliances and ententes. European crises since 1870. International congresses and conferences. The



collapse of European diplomacy, 1914. The state papers critically examined. The Peace Conference of 1919.

American diplomacy during the Civil War, especially with respect to problems of neutrality. Foreign relations of the United States, 1865-1898. Anglo-American arbitrations. The diplomacy of the Spanish-American War. The United States as a world power. Canal diplomacy. The United States and the Great War.

**Public law e121—History of diplomacy.** Credit II. 3 points Winter Session. Mr. H. F. MUNRO

10-10:50 a. m., Monday and Wednesday. Room 615 Kent. Fee \$24

Evolution of relations between independent states and manner in which those relations are conducted. History of diplomatic system of Europe from its beginnings to present time, and exposition of preceding religious, dynastic, territorial and commercial struggles. Development of European concert prior to Peace of Westphalia. Examination of most important of general European treaties, beginning with those concluded at Congress of Westphalia, and ending with those of the Peace Conference of 1919.

**Public law e122—History of American diplomacy.** Credit II. 3 points Spring Session. Mr. H. F. MUNRO

10-10:50 a. m., Monday and Wednesday. Fee \$24

Special attention given to history and methods of diplomacy of United States: (1) Diplomacy of Revolution; (2) period from Treaty of Peace of 1783 to termination of War of 1812; (3) from the termination of that War to Civil War; (4) from outbreak of that War to present time.

**Public law e177—Inter-American relations.** Credit II. 3 points Winter Session. Mr. S. G. INMAN

7:40-9:20 p. m., Tuesday. Room 614 Kent. Fee \$24

The aim of this course is to study historic relations between Hispanic America and the United States, with a view to discovering how past misunderstandings may be avoided and future relations improved. Topics treated will include racial inheritances of Hispanic Americans, Bolivia's international doctrine, Monroe Doctrine, Pan-American conferences, elements of union and division in Hispanic-American countries, new policy of the United States in the Caribbean, Mexican-American relations, Hispanic America, and the World War, human qualities in Pan-Americanism.

## GREEK

**Greek e1-2—Elementary Greek.** Credit I, IV. 4 points each Session. Dr. HELEN MCCLEES

4:30-5:55 p. m., Monday, Wednesday, and Thursday. Room 501 Hamilton. Fee \$32 each Session

This course is intended for students who have no previous knowledge of Greek.

Reading and oral drill will form a large part of the classroom work and a careful study will be made of the fundamental forms and grammatical principles of the language. The prepared work will be limited to three classroom hours each week. Thirty-five minutes of each period will be devoted to additional oral and written drill and practice. The work will be based primarily upon Xenophon's *Anabasis* but in the Spring Session selections from Homer's *Iliad* will also be read.

**Greek e3—Homer, Iliad.** Credit I, IV. 3 points Winter Session. Dr. S. B. MURRAY, JR.

3:10-4:25 p. m., Tuesday and Thursday. Room 518 Hamilton. Fee \$24

Prerequisite: 2 units of Elementary Greek or the equivalent.



**Extension students who are qualified will also be admitted to the following courses:**

**Greek 149—Introduction to Greek art and archaeology.** Credit II. 3 points Winter Session. Dr. T. L. SHEAR

2:10-4 p. m., Tuesday. Room 401 Avery. Fee \$24

Lectures, required reading, and reports upon assigned topics with occasional visits to the Metropolitan Museum of Art. The course will begin with a brief survey of the Prehellenic antiquities, but the main stress will be laid on historic Greek art in its various fields. Museum hours will be arranged at the opening of the course.

Will not be given for less than five students

**Greek 201-202—Greek literature.** Part I. Poetry. Credit II. 3 points each Session. Professor L. R. VAN HOOK

5:10 p. m., Wednesday and Friday. Room 712 Philosophy. Fee \$24 each Session

Designed to give a general survey of Greek poetry with extensive reading. The first half year will be devoted to the study of epic, lyric, and pastoral poetry; the second half year to the Attic drama.

**For a course in Linguistics, see p. 90**

## HISTORY

**History eX1—American history.** Texts, discussions, readings, notes, maps. 3 points Winter Session. Mr. S. C. WALLACE

4:30-5:45 p. m., Tuesday and Friday. Room 702 Hamilton. Fee \$24

This course aims to cover the requirements for college entrance and to give a brief survey of the essential facts of American history from the earliest discoveries to the present time. The study will give due emphasis to political, territorial, commercial, industrial and social development. The successful completion of this course will count toward the removal of entrance conditions in history.

**History eX2—American history.** Texts, discussions, readings, notes, maps. 3 points Spring Session. Fee \$24. Mr. S. C. WALLACE

Section 1—11 a. m.-12:15 p. m., Tuesday and Friday

Section 2—7-8:15 p. m., Monday and Thursday

Course eX1 repeated in the Spring Session.

**History e1—The foundations of modern Europe.** Lectures, readings and discussions. Credit I, IV. 3 points Winter Session. Fee \$24

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 703 Hamilton. Mr. E. EARLE

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 703 Hamilton. Mr. E. EARLE

Section 3—4:30-5:45 p. m., Monday and Thursday. Room 703 Hamilton. Dr. H. J. CARMAN

Section 4—4:30-5:45 p. m., Tuesday and Friday. Room 703 Hamilton. Dr. M. P. CUSHING

Section 5—8:20-9:35 p. m., Monday and Thursday. Room 703 Hamilton. Mr. A. M. ARNETT

After a brief survey of the contributions of the ancient world and of the middle ages to European civilization, the course will deal with important political, economic and intellectual achievements from the fifteenth century to the eighteenth. It will treat of the spirit of reform and of revolt, oversea colonization, monarchy by divine right, the various aspects of the 'old régime', the French Revolution, and the era of Napoleon.

Texts: Hayes, *Syllabus of Modern History*; Hayes, *Political and Social History of Modern Europe*, 2 vols.

Taken in conjunction with Philosophy 1, this course may be substituted for Contemporary Civilization A as given in Columbia College.

**History e1a—Modern and contemporary history.** Lectures, readings and discussions. Credit I, IV. 3 points Winter Session. Professor B. B. KENDRICK  
4:30–5:45 p. m., Monday and Thursday. Room 702 Hamilton. Fee \$24

Course e2 given in the Winter Session.

**History e2—Modern and contemporary history.** Lectures, readings and discussions. Credit I, IV. 3 points Spring Session. Fee \$24

Section 1—3:10–4:25 p. m., Monday and Thursday. Mr. E. EARLE

Section 2—3:10–4:25 p. m., Tuesday and Friday. Professor B. B. KENDRICK

Section 3—3:10–4:25 p. m., Tuesday and Friday. Mr. E. EARLE

Section 4—4:30–5:45 p. m., Monday and Thursday. Dr. H. J. CARMAN

Section 5—8:20–9:35 p. m., Monday and Thursday. Mr. A. M. ARNETT

This course is designed as an introduction to current national and international problems. The principal topics will be the work of the Congress of Vienna in reshaping the map of Europe, the industrial revolution, the development of Italian and German unity, the Third French Republic, the rise of Russia, the intellectual achievements of the nineteenth century, modern social problems, imperialism in Africa and the Orient, and the causes, character and consequences of the war.

Taken in conjunction with Philosophy e2, this course may be substituted for Contemporary Civilization A as given in Columbia College.

**History e2a—The foundations of modern Europe.** Lectures, readings and discussions. Credit I, IV. 3 points Spring Session. Dr. M. P. CUSHING  
4:30–5:45 p. m., Monday and Thursday. Fee \$24

Course e1 repeated in the Spring Session.

**History e5-6—A survey of the history of the ancient world.** Lectures, readings and discussions. Credit I, IV. 3 points each Session. Dr. W. E. CALDWELL

3:10–4:25 p. m., Tuesday and Friday. Room 702 Hamilton. Fee \$24 each Session

Gives particular attention to economic conditions and the development of art, literature, philosophy and religion in the Orient, Greece and Rome. The successful completion of this course may count toward the removal of entrance conditions in history and three points of College credit.

**History e9—The formation of the United States.** Lectures, readings and discussions. Credit I, IV. 2 points Winter Session. Professor D. R. FOX  
7–8:40 p. m., Monday. Room 717 Hamilton. Fee \$16

After a survey of the European background of American history and the establishment in the New World of European institutions of contrasted types, attention is fixed upon the English settlements, their development, and their experience with the colonial system seeking to protect and control them, resulting finally in revolt, union and the organization of the United States

Syllabus: Schuyler and Fox, *Syllabus of American History*.

**History e10—The development of American nationality.** Lectures, readings and discussions. Credit I, IV. 2 points Spring Session. Professor D. R. Fox

7-8:40 p. m., Monday. Fee \$16

Beginning with the triumph of Jeffersonian democracy, this course considers our foreign relations culminating in the War of 1812, and traces the influence of manufactures, the frontier and slavery upon the sentiment of nationalism. The Civil War is treated with emphasis upon its political and constitutional phases; followed by a survey of reconstruction in the southern states, after which attention is paid to the development of railroads, the conflicts of capital and labor, currency and the tariff, imperialism and political readjustment to meet new social needs.

Syllabus as for History e9.

**History e19—Imperialism and world politics in the nineteenth and twentieth centuries.** Credit I, IV. 2 points Winter Session. Mr. P. T. Moon  
2:45-4:25 p. m., Thursday. Room 702 Hamilton. Fee \$16

Traces the recent growth of imperialism and analyzes its characteristics as exemplified in the partition of Africa, the awakening of Japan, the problem of China, the interplay of ambitions in the Far East, the Bagdad railway scheme, the Mexican question, etc. Attempts to show the importance of imperialism and world politics in relation to the war and the peace conference.

**History e20—Political and social aspects of the war and its results.** Credit I, IV. 2 points Spring Session. Mr. P. T. Moon  
2:45-4:25 p. m., Thursday. Fee \$16

Laboratory course. A study of the war, the peace conference, and current events, with the aim of bringing the happenings of the present day into correlation with such fundamental features of modern history as nationalism, democracy, socialism, militarism, and imperialism.

**History e103-104—The history of the Eastern question.** Lectures and conferences. Credit II. 3 points each Session. Fee \$24 each Session. Mr. V. H. KALENDERIAN

Section 1—7:30-9:10 p. m., Tuesday. Room 403 Avery

Section 2—4:30-6 p. m., Tuesday. Room 409 Avery

This course deals with the fate of the Ottoman Empire in Europe, Asia and Africa. A brief survey of the Byzantine and Latin Empires; the conquests of the Turks; the fall of Constantinople and its influence on the successive phases of European diplomacy. The history of the Eastern question during the eighteenth century. Napoleon's Oriental projects; the Holy Alliance and the Eastern question up to the present time, including the present war.

Attention is to be given, with the historical side of the question involving the national and international aspects, to the racial characteristics, the religious, economic and social conditions and cultural background of the peoples involved.

**History e121-122—History of European thought and culture.** Credit II. 3 points each Session. Dr. M. P. CUSHING  
4:30-6:10 p. m., Tuesday. Room 717 Hamilton. Fee \$24 each Session

Part I: Primitive and ancient culture; Graeco-Roman and patristic thought; the medieval church; universities; scholasticism. Part II: The decline of scholasticism; humanism; modern science and rationalism; the philosophic movement in France; German philosophy and the war; social science; revolutionary philosophy; contemporary skepticism.

**History e123-124—Europe in the Middle Ages, 300-1500.** Credit II. 3 points each Session. Professor A. P. EVANS

4:30-6:10 p. m., Thursday. Room 717 Hamilton. Fee \$24 each Session



This course deals with the period when the foundations of the institutions and ideas of modern Europe were laid. After discussing briefly the causes of the decay of the Roman Empire, it will describe the establishment of barbarian kingdoms upon the ruins of that Empire and trace their evolution through the feudal age to the beginnings of the present national states of Europe. The course treats also of the growth and organization of the Christian Church and its influence upon the institutions, thought and culture of Europe; Mohammed and the Saracen civilization; early methods of agriculture and industry; the manorial and gild system; the rise of towns and the development of commerce; the universities and the revival of learning, art, literature and science; and the initial discoveries overseas which mark the opening of the modern age.

**History e125—History of Russia.** Lecture-study course. Credit II. 3 points Winter Session. Professor J. D. PRINCE

4-5:40 p. m., Wednesday. Room 701 Philosophy. Fee \$24

The work will cover a careful treatment of Russian history from the earliest times to the modern period, with a discussion of the attitude of Russia during the world war and a brief survey of its political development. Special native lecturers will address the class on modern Russian political thought. In connection with this work should be noted the following course which stands in close relation to the history of Russia and is a desirable supplement in order to understand Russian development.

**History e126—History of Poland, Bohemia, Serbia and Bulgaria.** Credit II. 3 points Spring Session. Professor J. D. PRINCE

4-5:40 p. m., Wednesday. Fee \$24

The work will be supplemented by special lectures given by native experts on the present situation in the new Slavonic states of Poland, Czecho-Slovakia, and the Kingdom of the Serbs and Croats.

**History e155-156—Social and economic forces in European history since the revolutionary movements of 1848.** Credit II. 3 points each Session. Mr. E. EARLE

7:30-9:10 p. m., Friday. Room 703 Hamilton. Fee \$24 each Session

A survey of the internal problems of the European nations, with special emphasis upon the importance of social and economic factors in the determination of national and international policies. Among the specific topics which will be discussed at some length are: the industrial revolution on the continent; the nationalistic movements and their effect upon industrial and commercial policies; the economic basis for the foundation and platforms of political parties; the rise of capitalistic imperialism; military and economic preparedness as a cause and an effect of commercial and capitalistic imperialism. The causes of the Great War will be considered in the light of domestic as well as international conditions.

**History e159—Modern England and the British Empire.** Lectures, readings and discussions. Credit II. 3 points Winter Session. Professor R. L. SCHUYLER

9:10-10:50 a. m., Saturday. Room 615 Kent. Fee \$24

This course will deal with the history of England from the reign of Elizabeth to the present, emphasizing especially political and constitutional development. Especial attention will be paid to English expansion and the growth of the British Empire. The relations between England and the self-governing colonies will be discussed with a view to making clear the nature of the present problems of British imperial reconstruction.

**History e165-166—The recent history of the United States.** Lectures, readings and discussion. Credit II. 3 points each Session. Professor D. S. MUZZEY

11 a. m.-12:40 p. m., Saturday. Room 615 Kent. Fee \$24 each Session

This course will deal with the history of the United States during the last quarter of a century. It will emphasize first of all the problems raised in our political and economic life by



the entrance of our country into world politics. The theories of 'new nationalism' and 'new democracy' will be discussed in their bearing on our inherited institutions and in their implications for our future development.

**History e177—Latin America: people; government; resources.** Credit II, IX. 3 points Winter Session. Professor W. R. SHEPHERD  
7:30-9:10 p. m., Monday. Room 615 Kent. Fee \$24

This course, followed by History e178, aims to supply the knowledge and cultivate the attitude of mind which may enable Americans to understand Latin-Americans, appreciate their circumstances, work with them along the lines of material and intellectual progress, and contribute in general to the promotion of inter-American friendship and commerce.

**History e178—Latin America: industry; transportation; commerce.** Credit II, IX. 3 points Spring Session. Professor W. R. SHEPHERD  
7:30-9:10 p. m., Monday. Fee \$24

For description see History e177.

## HYGIENE

**Hygiene e1—Hygiene and sanitation.** Credit I, IV. 3 points Winter Session. Professor G. L. MEYLAN

5-6:15 p. m., Monday and Thursday. Room 403 Avery. Fee \$24

Winter Session—Health and disease in terms of general biology; history and development of hygiene and sanitation. Mortality and morbidity rates; causes of death—old age, violence, disease; modern theory of disease. Infectious diseases; sources of disease; disease carriers—man, animals, insects, air, water, fomites. Prophylaxis; physiological defences of human body; immunity; vaccination; sero-therapy. Isolation; quarantine; disinfection. Food inspection; waste disposal. Industrial hygiene; school hygiene. National, state and municipal health agencies.

**Hygiene e2—Personal hygiene and first aid.** Credit I, IV. 3 points Spring Session. Professor G. L. MEYLAN

5-6:15 p. m., Monday and Thursday. Fee \$24

Spring Session—Significance of health, constitution, vital resistance. Relation of personal habits to morbidity and mortality. Health fads. Hygiene of nutrition, exercise, excretion, bathing, clothing, mind, and rest. First aid; hemorrhage, bruises, wounds, burns, sprains, dislocations, fractures; foreign bodies in eye, ear, nose, throat; poisons and their antidotes; asphyxia and drowning.

## INTERNATIONAL LAW

See Government and Public Law, pp. 78-81

## INTERNATIONAL RELATIONS

See Government and Public Law, pp. 78-81

## JOURNALISM

**Journalism e1—General popular science.** Credit I. 3 points Winter Session. Mr. J. C. MORRELL

4:30-5:45 p. m., Monday and Wednesday. Room 311 Havemeyer. Fee \$24

A lecture course on the inorganic sciences, especially chemistry and physics, given in a popular style, liberally illustrated with experiments and specimens from the Chandler Museum.

The important elements and their compounds, together with their physical and chemical properties and uses, will form the foundation of the course. Scientific development will be accentuated and typical industrial processes will be treated in a concise manner.

**Journalism e2—General science.** Credit I. 3 points Spring Session.  
Professor H. E. CRAMPTON

4:30–5:45 p. m., Tuesday and Friday. Fee \$24. Room 619 Schermerhorn

A lecture course treating of the history and principles of biological sciences, especially zoology and anthropology. Both Journalism e1 and e2 are required of students who matriculate in the School of Journalism.

## LATIN

**Latin eX1–X2—Elementary Latin and Cæsar.** Credit I in Columbia College; IV. 3 points each Session. Dr. HELEN McCLEES

4:30–5:45 p. m., Tuesday and Friday. Room 501 Hamilton. Fee \$24 each Session

The aim of this course is to impart knowledge of the elements of Latin and to develop the power to understand and translate Latin of average difficulty with ease and accuracy. To this end there will be a thorough study of forms, vocabulary, idioms and elementary syntax, together with extensive practice in reading, and constant drill, oral and written, in simple Latin composition.

No previous knowledge of Latin is required.

**Latin eX3—Cæsar, Nepos and prose composition.** Credit I in Columbia College if offered in conjunction with Latin eX1 or eX8; IV. 3 points Winter Session. Dr. S. B. MURRAY, Jr.

4:30–6 p. m., Monday and Thursday. Room 518 Hamilton. Fee \$24

This course, given in the Winter Session, is planned for students who have studied Latin one year and for those who wish to review the work of the second year of high school.

**Latin eX8—Elementary course.** Credit I in Columbia College if offered in conjunction with Latin eX2 or eX3; IV. 3 points Spring Session. Dr. S. B. MURRAY, Jr.

4:30–6 p. m., Monday and Thursday. Fee \$24

A course for beginners.

**Latin eY1—Ovid and Vergil.** Credit I in Columbia College;<sup>1</sup> IV. 3 points Winter Session. Dr. S. B. MURRAY, Jr.

4:30–6 p. m., Tuesday and Friday. Room 518 Hamilton. Fee \$24

**Latin eY3—Cicero and Sallust.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY5 or eY6. 3 points Winter Session. Dr. HELEN McCLEES

7:30–9 p. m., Tuesday and Friday. Room 501 Hamilton. Fee \$24

**Latin eY4—Cicero and Sallust.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY5 or eY6. 3 points Spring Session. Dr. S. B. MURRAY, Jr.

4:30–6 p. m., Tuesday and Friday. Fee \$24

<sup>1</sup> To secure this credit all three courses, Latin eY1 or eY8, eY3 or eY4, eY5 or eY6, or their equivalents in the Summer Session, must be offered.

**Latin eY5—Latin prose composition.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY3 or eY4. 2 points Winter Session. Dr. S. B. MURRAY, Jr.

2:10–3 p. m., Monday and Wednesday. Room 501 Hamilton. Fee \$16

This course is designed to give a thorough review of the material which is ordinarily included in the high-school course in prose composition.

Prerequisite: Latin eX1–X2 or the equivalent.

**Latin eY6—Latin prose composition.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY3 or eY4. 2 points Spring Session. Dr. S. B. MURRAY, Jr.

2:10–3 p. m., Monday and Wednesday. Fee \$16

Latin eY5 repeated in the Spring Session.

**Latin eY8—Ovid and Vergil.** Credit I in Columbia College;<sup>1</sup> IV. 3 points Spring Session. Dr. HELEN MCCLEES

7:30–9 p. m., Tuesday and Friday. Fee \$24

Latin eY1 repeated in the Spring Session.

**Latin e13—Selections from Latin poetry,** ranging from Ennius to Boethius, with a few popular songs and hymns of the middle ages. Credit I. 3 points Winter Session. Professor N. G. MCCREA

3:10–4:25 p. m., Tuesday and Friday. Room 501 Hamilton. Fee \$24

Prerequisite: 4 units of Elementary Latin or the equivalent.

**Latin e14—Tacitus, Agricola (life of a governor of Britain), Germania (manners and customs of the Germans), selections from the Histories IV–V (an uprising in the Rhineland).** Credit I. 3 points Spring Session. Professor F. G. MOORE

3:10–4:25 p. m., Tuesday and Friday. Fee \$24

This course covers in suggestive outline Roman rule in Britain, Gaul, and on the Rhine, giving attention to the permanent Roman influences, potent in modern, as well as in medieval, history. Care will be taken to show in advance from day to day by what methods one may grasp the meaning in the Latin, and daily gain in reading power.

Prerequisite: 4 units of Elementary Latin or the equivalent.

**Extension students who are qualified will also be admitted to the following courses:**

**Latin 149—Hellenistic and early Roman archaeology.** Credit II. 3 points Winter Session. Dr. S. B. MURRAY, Jr.

3:10 p. m., Monday, Wednesday and Friday. Room 713 Philosophy. Fee \$24

Lectures, reports, and required reading. The Hellenistic foundations, the Etruscan elements, and a systematic study of the archaeology of the Roman republic. Emphasis will be laid not only upon the evolution in the various classes of monuments, but also upon their connection with the civilization in which they arose. Use will be made of material in the Metropolitan Museum of Art whenever necessary.

<sup>1</sup> To secure this credit all three courses, Latin eY1 or eY8, eY3 or eY4, eY5 or eY6, or their equivalents in the Summer Session, must be offered.



**Latin 150—Roman archaeology of the Empire.** Credit II. 3 points  
Spring Session. Dr. S. B. MURRAY, Jr.

3:10 p. m., Monday, Wednesday and Friday. Fee \$24

Lectures, reports and required reading. A systematic study of the archaeology of the Empire. Besides the monuments of Rome itself, more or less Roman examples from the provinces will be studied to show the cosmopolitan character of Roman imperial civilization through provincial influence upon Rome. Use will be made of material in the Metropolitan Museum of Art whenever necessary.

Prerequisite: Latin 149, or its equivalent.

**Latin 151—Roman epigraphy.** Introduction to the study of Latin inscriptions. Credit II. 3 points Winter Session. Professor J. C. EGBERT

4:10-6 p. m., Thursday. Room 713 Philosophy. Fee \$24

Lectures, discussions, and outside work consisting of the reading of printed inscriptions, the study of original inscriptions, and the preparation of papers upon special topics.

**Latin 152—Roman epigraphy.** Official and sepulchral inscriptions. Credit II. 3 points Spring Session. Professor J. C. EGBERT

4:10-6 p. m., Thursday. Fee \$24

Prerequisite: Latin 151 or its equivalent.

The general plan and scope of the work will be the same as in Latin 151.

**Latin 201-202—Latin literature of the Republic.** Credit II. 3 points each  
Session. Professor N. G. MCCREA

10 a.m.-12m., Saturday, Room 706 Philosophy. Fee \$24 each Session

Lectures, readings and discussions.

The classroom work will be chiefly concerned with the following authors: Ennius, Plautus, Terence, Lucretius, Catullus, Cicero, Caesar, Sallust. They will be discussed, partly as reflecting the Roman outlook upon life, partly in their relation to modern literature and thought.

Those who expect to take this course will find it helpful to read in advance, if possible, portions of the authors mentioned above. A list of the readings may be had upon application to the instructor.

**For a course in Linguistics, see p. 90**

## LAW

**Law eX1-X2—Nature and functions of law.** Credit I, IV. 2 points each  
Session. Mrs. MABEL WITTE MERRITT

4:30-6:10 p. m., Monday. Room 614 Kent. Fee \$16 each Session

The object of this course is to acquaint students with the history and nature of legal concepts and terms. It is not intended for law students but for persons, especially women, who desire a knowledge of legal questions for practical purposes and for general culture.

The work will include, in the Winter Session, the general principles of contracts, agency, personal property, corporations, master and servant, domestic relations; in the Spring Session, real property, deeds, mortgages, dowers, wills and the administration of estates.

Leading cases will be studied and papers written upon topics of individual interest. Documents such as contracts, bills and notes, deeds, bonds, mortgages, and wills will be analyzed in class.

**Law eX3—Legal practice.** 3 points Winter Session. Mr. H. R. MEDINA  
8-9:30 p. m., Monday. Room 411 Kent. Fee \$24

This course is offered primarily for students who have completed their law course and are beginning the active practice of their profession. The aim of the course is to aid the student



who has received thorough training in legal theory to study its application in practice more systematically than is possible in the modern law office.

The work will include not only such practical matters as the formation of corporations and partnerships, the drafting of the more usual forms of commercial contracts, the probate of wills and other steps in the administration of the estates of decedents, but also a discussion of the practical problems of law office organization and the conduct of litigation, preparation for trial, the actual trial of cases, the drawing of practice papers, etc., etc.

Textbook: Bostwick's *Lawyers Manual* (2d edition).

**Law eX4—Spanish-American civil law.** 2 points Spring Session. Mr. E. GIL

7:40–9:10 p. m., Tuesday. Fee \$16

This course will be devoted to the correlated study of the fundamental doctrines embodied in the civil codes of the various Spanish-American countries. Attention will be devoted particularly to the codes of Argentina, Brazil, Porto Rico, and the Philippine Islands, in comparison with the Louisiana civil code. Special attention will be given to those legal questions arising in commercial and international relations between the United States and the Spanish-American countries.

Typewritten synopsis of lectures prepared by the instructor and assigned reading.

Reference books: Walton's *Civil Law in Spain and Spanish-America*; Sherman's *Roman Law in the Modern World*, Vol. II; Holland's *Jurisprudence*, 11 ed.; Charles F. Reach's *Civil Law in America*.

For courses in Latin-American Commercial Law, see Business 67-68, p. 41; Argentine Law, see Business e67a-68a, p. 41; Commercial Law for Engineering Students, see Business e70, p. 41; Contracts, see Business e73, e74, pp. 41, 42; Second Year Business Law, see Business e75-76, p. 42.

## LINGUISTICS

**Linguistics e102—Methods of learning and teaching languages.** Lecture-study course. Credit II. 3 points Spring Session. Professor J. D. PRINCE

4-5:40 p. m., Friday. Fee \$24

This course will consist of a series of lectures on the origin and history of language and the best scientific methods of acquiring practical knowledge of the various classes of human speech.

## MATHEMATICS

**Mathematics eX1—Algebra, elementary and intermediate course** (complete). 4 points Winter Session. Mr. E. L. POST

6:10–7 p. m., Monday, Tuesday, Thursday, and Friday. Room 203 Hamilton. Fee \$32

This course reviews elementary algebra to and beyond quadratics. It includes the fundamental operations, factoring, fractions, ratio and proportion, quadratics, binomial theorem (simple forms), progressions and graphical methods. *It is not open to beginners.*

**Mathematics eX2—Algebra, elementary and intermediate course** (complete). 4 points Spring Session. Mr. J. J. DOUGLAS

7:25–8:15 p. m., Monday, Tuesday, Thursday, and Friday. Fee \$32

Course eX1 repeated in the Spring Session.

**Mathematics eX3—Algebra, elementary course.** 3 points Winter Session.  
Fee \$24

Section 1—7-8:15 p. m., Monday and Thursday. Room 213 Hamilton. Mr. V. S. MALLORY

Section 2—8:20-9:35 p. m., Tuesday and Friday. Room 213 Hamilton. Mr. J. J. DOUGLAS

This course, planned for beginners, covers elementary algebra to quadratics.

**Mathematics eX4—Algebra, elementary course.** 3 points Spring Session.  
Mr. B. C. KEELER

8:20-9:35 p. m., Monday and Thursday. Fee \$24

Mathematics eX3 repeated in the Spring Session.

**Mathematics eX5—Algebra, intermediate course.** 3 points Winter Session. Fee \$24

Section 1—4:30-5:45 p. m., Tuesday and Friday. Room 202 Hamilton. Professor G. W. MULLINS

Section 2—8:20-9:35 p. m., Monday and Thursday. Room 202 Hamilton. Mr. J. J. DOUGLAS

Section 3—7-8:15 p. m., Tuesday and Friday. Room 202 Hamilton. Mr. B. C. KEELER

This course is planned especially for students who have had a course in elementary algebra to quadratics. The work will begin with a brief review of the more important topics of elementary algebra and proceed to the study of quadratic equations, the binomial theorem and the progressions.

**Mathematics eX6—Algebra, intermediate course.** 3 points Spring Session. Mr. V. S. MALLORY

7-8:15 p. m., Monday and Thursday. Fee \$24

Mathematics eX5 repeated in the Spring Session.

**Mathematics eY1—Plane geometry (complete).** 4 points Winter Session. Fee \$32

Section 1—7:25-8:15 p. m., Monday, Tuesday, Thursday, and Friday. Room 203 Hamilton. Mr. J. J. DOUGLAS

Section 2—5:10-6:00 p. m., Monday, Tuesday, Thursday, and Friday. Room 203 Hamilton. Mr. E. L. POST

The five books on plane geometry, including rectilinear figures, the circle, proportion areas of polygons, regular polygons and circles.

**Mathematics eY2—Plane geometry.** 4 points Spring Session. Mr. E. L. POST

6:10-7 p. m., Monday, Tuesday, Thursday, and Friday. Fee \$32

Mathematics eY1 repeated in the Spring Session.

**Mathematics eA1—Trigonometry.** Credit I, IV. 2 points Winter Session. Fee \$16

Section 1—4:30-5:20 p. m., Tuesday and Friday. Room 213 Hamilton. Mr. J. J. DOUGLAS

Section 2—7:20-9:10 p. m., Tuesday and Friday. Room 213 Hamilton. Mr. E. L. POST

Section 3—8:20-9:10 p. m., Monday and Thursday. Room 203 Hamilton. Mr. E. L. POST

The subject-matter of this course includes trigonometric functions, circular measure, relations between the functions, functions of several angles, inverse functions, trigonometric equations, logarithms, solution of triangles.

Mathematics eX5 or its equivalent is presupposed.

**Mathematics eA2—Solid geometry.** Credit I, IV. 3 points Spring Session. Mr. J. J. DOUGLAS

5:45-7 p. m., Tuesday and Friday. Fee \$24

Mathematics eA3 repeated in the Spring Session.

**Mathematics eA3—Solid geometry.** Credit I, IV. 3 points Winter Session. Mr. W. W. RANKIN

7-8:15 p. m., Tuesday and Friday. Room 214 Hamilton. Fee \$24

In addition to the usual theorems on lines, planes and solids, the geometry of the sphere, and the development of space intuition, this course lays special stress upon the purely logical side of the subject and the nature of mathematical proof.

Plane geometry is presupposed.

The above course is equivalent to Mathematics A2 or A3 in the *Announcement of Columbia College*

**Mathematics eA4—Trigonometry.** Credit I, IV. 2 points Spring Session. Mr. E. L. POST

4:30-5:20 p. m., Tuesday and Friday. Fee \$16

Mathematics eA1 repeated in the Spring Session.

**Mathematics e1—Algebra.** Credit I, IV. 3 points Winter Session. Fee \$24

Section 1—7-8:15 p. m., Monday and Thursday. Room 202 Hamilton. Mr. J. M. BIRD

Section 2—4:30-5:45 p. m., Monday and Thursday. Room 202 Hamilton. Dr. K. W. LAMSON

This course is designed for students who desire to continue with such more advanced topics as permutations and combinations, determinants with applications to the solutions of linear equations, complex numbers, theory of equations, with reference to the solution of numerical equations of higher degree, undetermined coefficients involving the use of finite series, and partial fractions.

Mathematics eA1 or its equivalent is presupposed.

Equivalent to Mathematics 1 in the *Announcement of Columbia College*.

**Mathematics e2—Algebra.** Credit I, IV. 3 points Spring Session. Dr. K. W. LAMSON

7-8:15 p. m., Monday and Thursday. Fee \$24

Mathematics e1 repeated in the Spring Session.

**Mathematics e3—Analytical geometry.** Credit I, IV. 3 points Winter Session. Dr. K. W. LAMSON

7-8:15 p. m., Monday and Thursday. Room 214 Hamilton. Fee \$24

Introduction to algebraic geometry, dealing with such topics as coordinate systems, transformations, loci and their equations, the straight line, circle, parabola, ellipse, hyperbola,

the geometric interpretation of the general equation of second degree and the elements of three-dimensional geometry.

Mathematics eA1 and e1 or their equivalents are presupposed.

Equivalent to Mathematics 3 or 4 in the *Announcement of Columbia College*.

**Mathematics e4—Analytical geometry.** Credit I, IV. 3 points Spring Session. Mr. J. M. BIRD

7-8:15 p. m., Monday and Thursday. Fee \$24

Mathematics e3 repeated in the Spring Session.

**Mathematics e55-56—Calculus.** Credit I, IV. 3 points each Session. Professor G. W. MULLINS

7-8:15 p. m., Tuesday and Friday. Room 303 Hamilton. Fee \$24 each Session

The notions and operations of function, differentiation, and integration are presented with applications to geometry, physics, and mechanics.

Mathematics e3 or its equivalent is presupposed.

Equivalent to Mathematics 55-56 in the *Announcement of Columbia College*.

**Mathematics e58—Calculus.** Credit I, IV. 3 points Spring Session. Mr. W. W. RANKIN

8:20-9:35 p. m., Tuesday and Friday. Fee \$24

Mathematics e55 repeated in the Spring Session.

## MUSIC

**Music e7-8—Elementary harmony.** Credit I. 3 points each Session. Messrs. S. BINGHAM and B. W. HOUGH

4:10-5 p. m., Tuesday and 4:10-5:50 p. m., Wednesday. Room 701 Journalism. Fee \$24 each Session

**Music e9-10—Advanced harmony.** Credit I. 3 points each Session. Messrs. S. BINGHAM and B. W. HOUGH

2:10-3 p. m., Monday, Wednesday, and Friday. Room 701 Journalism. Fee \$24 each Session

**Music e31-32—University Orchestra.** Credit I. 1 point each Session, if taken in conjunction with another course in music. Professor D. G. MASON and Mr. H. DITTLER

8-10 p. m., Wednesday. Room 701 Journalism. Fee for University students expecting credit, \$8 each Session. Others desiring to take this course without credit may do so upon the payment of the fee of \$6, payable in advance for the year. There is no University fee for this course.

**Music e33-34—University Chorus.** Credit I. 1 point with special arrangement if taken in conjunction with another course in music. Professor WALTER HENRY HALL

8:15-9:45 p. m., Tuesday. Earl Hall. Fee for University students expecting credit, \$8; otherwise no charge, excepting for music used. There is no University fee for this course.

It is expected that concerts will be given during the year, when the University Chorus will join with that of Brooklyn (Brooklyn Oratorio Society), forming a large festival chorus. Stu-



dents will be allowed to become members of this chorus only after application to Professor HALL, and after a voice trial.

**Music e35-36—Violin-playing.** Credit I when taken with a theoretical course in music. Mr. H. DITTLER

3:10-5:10 p. m., Tuesday. Room 703 Journalism. Special fee \$35 each Session. Not charged at \$8 per point

Individual instruction will be given in the technique of the instrument and in interpretation.

**Music e37-38—Ensemble-playing.** Credit I when taken with a theoretical course in music. Mr. H. DITTLER

8:10-9:45 p. m., Thursday. Room 701 Journalism. Special fee \$12 each Session. Not charged at \$8 per point

Coaching in chamber music for string players and pianists. The purpose of this course will be to acquaint students with standard masterpieces of musical literature, as well as to give them personal training.

This course will not be given for less than four students.

**Music e39-40—Organ course.** Mr. DAVID McK. WILLIAMS

Hours to be arranged

Private lessons. Special fee \$75 for the Spring Session. Not charged at \$8 per point

This course will include a weekly class lesson, or lecture recital, at which Mr. WILLIAMS will give an interpretation (or will interpret) the works of representative organ composers.

For full details in regard to this course, apply to Professor WALTER HENRY HALL, Room Q. Earl Hall, 11-11:30 a. m. daily, except Saturday.

**Music e41a,b-42a,b—Vocal training.** Sr. L. PARISOTTI

Hours to be arranged. 21 Claremont Avenue

*e41a-42a*, course of twenty private lessons, special fee \$50. Not charged at \$8 per point

*e41b-42b*, course of twenty class lessons, four in a class, special fee \$25. Not charged at \$8 per point

These lessons include: 1. Natural breathing adapted to the functions of the vocal apparatus. 2. Rules for the natural production and development of vocal sounds and their qualifications for tonal effects. 3. Coordination of the speaking action to the functions of the sounding and re-sounding organs. 4. Practical suggestions for expression.

**Music e43-44—History and interpretation of choral music.** 2 points each Session. Professor WALTER HENRY HALL.

2:10-3:50 p. m., Thursday. Room 701 Journalism. Fee \$16 each Session

A practical course, designed to treat the development of choral art from the time of Palestina to the present. The course will be illustrated by the members of the class, as well as by special groups of singers.

See also Anthropology e151, p.26

## NEUROLOGY

**Neurology e223-224—Neuro-anatomy.** The anatomy, histology, development and architectonics of the nervous system of man. Followed by a comparative study of the nervous system of the vertebrates. Lectures, demonstrations,

conferences, and laboratory work. Credit II, VI. 3 points each Session. Professors F. TILNEY and A. ELWYN

7-10 p. m., Tuesday. Neurologic Laboratory, College of Physicians and Surgeons, 437 West 59th Street. Fee \$24 each Session

This course is intended primarily for physicians, psychologists, and advanced students in medicine and zoology. The essentials of the structure of the nervous system will be presented, with special reference to the interpretation of the integrative action and functional control vested in the brain and spinal cord. The aim will be to supply an adequate morphologic basis to those concerned mainly with its function and its organic disturbances.

## OPTICS AND OPTOMETRY

The University offers a two years' course in optics and optometry for students of optometry. A special circular describing these classes will be sent on application to the Secretary of the University.

## ORAL HYGIENE (Dental Hygiene)

The University offers a one-year's course in Oral Hygiene (Dental Hygiene) to women students who desire to become dental hygienists. A special circular describing these courses will be sent on application to the Secretary of the University.

**The following courses are open to students in general:**

**Anatomy O.H.11—Anatomy and physiology.** 2 points Winter Session. Professor R. BURTON-OPITZ

3-3:50 p. m., Monday and Friday. Room 516 Schermerhorn. Fee \$16

These two subjects will be correlated and instruction given so that function of organs and tissues will be studied at the same time as their structure and location. Consideration will be given the bones of the skeleton, the muscles, and the circulatory and respiratory systems. Laboratory demonstrations will supplement the lectures.

Textbooks: Kimber and Gray's *Anatomy and Physiology for Nurses*.

**Nutrition O.H.12—Nutrition and dietetics.** 2 points Spring Session. Dr. I. S. WILE

3-3:50 p. m., Thursday. Fee \$16

Classification of foods and sources. Basis of calory feeding. Studies of proteins, carbohydrates, fats, mineral salts, vitamins, beverages, including water and alcohol. The relation of pasteurization, sterilization, and cookery to nutrition. Home sanitation. The relation of food to dentition. The relative nutritive values of meats, fish, cereals, vegetables, fruits. The place of milk and milk products in the dietary. Vitamins, their nature and function. Balanced rations. The dangers of dietetic irregularities. The economic factors in dietetics. Nutrition and dietetics with relation to health and disease.

**Anatomy O.H.14—Anatomy and physiology.** 2 points Spring Session. Professor R. BURTON-OPITZ

3-3:50 p. m., Monday and Friday. Fee \$16

A study of the organs of secretion and excretion; the nervous system, the special senses.

**Child Hygiene O.H.19—Child and school hygiene.** 1 point Winter Session. Dr. I. H. GOLDBERGER

3-3:50 p. m., Tuesday. Room 516 Schermerhorn. Fee \$8

A consideration of the hygiene of the school child covering observations for hygienic and easily discoverable physical defects, such as defects of vision, hearing, nasal breathing, and nutrition. School, home and medical care of these abnormalities will be considered in detail. Symptoms of illness in children, the hygiene of the classroom and methods of organizing school and class health leagues will also be emphasized.

**Hygiene O.H.24—Oral hygiene.** 2 points Spring Session. Professor A. H. STEVENSON

4-4:50 p. m., Wednesday. Fee \$16

Psychology of teaching hygiene to children. Group instruction and competition. Value of story and demonstration. Tooth brush drills. Lecturing in oral hygiene to adults. Preparation of lecture outlines. The use of charts, models, lantern slides, motion pictures, and other accessories, and where indicated.

## PERSONNEL MANAGEMENT

See Business e31-32—Principles of personnel management, p. 38; Business e117—The psychology of advertising and selling, p. 44; Business e161-162—Personnel management—general course, p. 47; Business e163—Personnel methods for office executives, p.47; Business e164—Personnel methods for institutions, p. 47; Psychology e145—Vocational and industrial psychology, p. 49

## PHILOSOPHY

**Philosophy e1—Principles of science: methods, deductive and inductive logic.** Lectures, recitations, and individual consultations with the instructor. Credit I, IV. 3 points Winter Session. Fee \$24. Messrs. J. H. RANDALL, JR., and D. S. MACKAY

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 503 Hamilton

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 503 Hamilton

Section 3—8:20-9:35 p. m., Tuesday and Friday. Room 503 Hamilton

This course is a study of the theory and practice of accurate thinking with emphasis on the detection of typical errors in reasoning. The principles of inductive and deductive logic will be examined both as formal scientific methods and in relation to their historical and psychological development and background.

Textbooks: Dewey's *How We Think*, A. L. Jones' *Logic, Inductive and Deductive*.

This course is the same as Philosophy 1 in Columbia College.

**Philosophy e2—Principles of science: concepts and problems of philosophy.** Lectures, recitations, and individual consultations with the instructor. Credit I, IV. 3 points Spring Session. Fee \$24. Messrs. J. H. RANDALL, JR., and D. S. MACKAY

Section 1—4:30-5:45 p. m., Monday and Thursday.

Section 2—3:10-4:25 p. m., Tuesday and Friday.

Section 3—8:20-9:35 p. m., Tuesday and Friday

In this course the scientific knowledge of the present day will be used as a basis of interpreting and criticizing fundamental philosophic conceptions of human nature and man's place in the universe.

This course is the same as Philosophy 2 in Columbia College.



**Philosophy e4—Principles of science; methods, deductive and inductive logic.** Credit I, IV. 3 points Spring Session. Dr. T. MUNRO  
4:30–5:45 p. m., Tuesday and Friday. Fee \$24

Course e1 repeated in the Spring Session for students entering at that time. For description see p. 96

**Philosophy e5—Principles of science; concepts and problems of philosophy.** Credit I, IV. 3 points Winter Session. Dr. T. MUNRO  
4:30–5:45 p. m., Tuesday and Friday. Room 503 Hamilton. Fee \$24

Course e2 given in the Winter Session. For description see p. 96.

**[Philosophy e135—Radical, conservative, and reactionary tendencies in present-day morals.** Credit II. 3 points Winter Session. Fee \$24. Professor W. P. MONTAGUE

Will not be given in 1920–1921; will be offered in 1921–1922.]

The course is designed as an introduction to contemporary problems of social or institutional ethics. These problems arise in connection with the conflicting theories as to the true nature and value of the established institutions of human society. The work of the course will, therefore, consist in a general survey of the fundamental institutions or forms of social relationship, and of the problems and controversies related to each of them. The order of study will be as follows:

1. The political problem of the powers of the state (anarchism *vs.* governmentalism).
2. The international problem of the federation of the world (pacifism *vs.* militarism).
3. The industrial problem of the status of property (socialism *vs.* laissez-faire).

**Philosophy e136—Radical, conservative, and reactionary tendencies in present-day morals.** Credit II. 3 points Spring Session. Professor W. P. MONTAGUE

7:40–9:30 p. m., Tuesday. Fee \$24

This course is a continuation of Philosophy e135, but either course may be taken separately. The work is designed as an introduction to contemporary problems of social or institutional ethics. These problems arise in connection with the conflicting theories as to the true nature and value of the established institutions of human society. The work of the course will, therefore, consist of a general survey of the fundamental institutions or forms of social relationship, and of the problems and controversies related to each of them. The order of study will be as follows:

4. The educational problem of the purpose of the school (vocationalism *vs.* general culture).
5. The woman problem of the organization of the family (feminism *vs.* the claim of the home).
6. The religious problem of the ideal of the church (anti-clericalism *vs.* christianity).

**Philosophy e137-138—The criteria of progress.** Credit II. 3 points each Session. Dr. T. MUNRO

4:30–6:10 p. m., Wednesday, Room 302 Philosophy. Fee \$24 each Session

A study of the concepts of justice, freedom, socialization, democracy, growth, adaptation, control, intelligence, culture and happiness as they are used by philosophers and sociologists, in attempting the evaluation of social change.

**Philosophy e141-142—General esthetics.** Credit II. 3 points each Session. Dr. HELEN H. PARKHURST

7:40–9:30 p. m., Tuesday. Room 302 Philosophy. Fee \$24 each Session

In the Winter Session some of the psychological problems of esthetics will be considered, concluding with the various theories of the origins of art and of its relations to other life activities.



In the Spring Session the more philosophic aspects of the subject will be stressed. Definitions of the chief esthetic values—beauty, the tragic, the sublime, etc., will be suggested; and the formal principles of art, such as symmetry, rhythm, and climax, will be discussed in their particular application to various arts.

**Philosophy e161-162—History of philosophy.** Credit II, IV. 3 points each Session. Dr. W. F. COOLEY

4:30-6:10 p. m., Friday. Room 403 Avery. Fee \$24 each Session

In the Winter Session the genesis of the fundamental problems of thought, ethics, and religion and the treatment they received from ancient and medieval thinkers will be traced. The Spring Session will be devoted to the consideration of these problems from the point of view of the modern world.

Text-book: Rogers, *Students' History of Philosophy*.

**Philosophy e163-164—French philosophy and ideals.** Credit II. 3 points each Session. Mr. J. H. RANDALL, Jr.

7:40-9:30 p. m., Thursday. Room 308 Philosophy. Fee \$24 each Session

Winter Session—Montaigne to the Revolution.

The development of the philosophic thought of the French people in its relation to the dominant intellectual, literary and social movements and ideals. The Renaissance, Cartesianism and the Classic Age, the radical movements and thought in the eighteenth century.

Spring Session—The Revolution to Syndicalism.

The development of the philosophic thought of the French people in its relation to the dominant literary and social movements and ideals. Romanticism and the humanitarian Utopians of Forty-Eight; Comte, Positivism and the philosophers of science; the Evolutionists, Fouillée, Guyau, Bergson; and the contemporary social and political philosophy.

**Phonetics, see pp. 64, 65, 68**

## PHOTOPLAY COMPOSITION

**Photoplay composition e1—Elementary course.** 3 points Winter Session. Fee \$24. Mrs. FRANCES TAYLOR PATTERSON

Section 1—3:10-4:25 p. m., Tuesday. Room 509 Hamilton

Section 2—7:45-9:00 p. m., Wednesday. Room 509 Hamilton

This course deals in general with the composition of cinematic plot as contrasted with dramatic and narrative plot. It takes up the main problems of presenting a story impressively through the medium of pictures alone. Special attention is paid to the principles of visual appeal, the effective use of motion-picture devices, the art of arousing and sustaining the spectator's interest, the creating of situations and crises, and the logic of emotionally satisfactory endings. Scenarios and detailed synopses are prepared according to the current usage in the studios. Films are exhibited and analyzed before the class.

Each student is required to write scenarios of at least one adaptation and one original photoplay.

**Photoplay composition e2—Elementary course.** 3 points Spring Session. Fee \$24. Mrs. FRANCES TAYLOR PATTERSON

Section 1—3:10-4:25 p. m., Tuesday

Section 2—7:45-9:00 p. m., Wednesday

Identical with Photoplay composition e1, but offered in the Spring Session.

**Photoplay composition e3—Intermediate course.** 3 points Winter Session. Fee \$24. Mrs. FRANCES TAYLOR PATTERSON  
7:45-9:00 p. m., Monday. Room 206 Journalism

This course deals specifically with the finer problems of the photoplay as an art. There is discussion of such topics as the psychology of cinema characters, symbolism, allegory, the spectator's imagination, dramatizing natural setting, pictorial composition, and the progression of pictures.

Each student is expected to complete the scenario of an original five-reel photoplay, or to produce other original work of equivalent value.

Prerequisite or parallel: Photoplay composition e1 or e2 or s2.

**Photoplay composition e4—Intermediate course.** 3 points Spring Session. Fee \$24. Mrs. FRANCES TAYLOR PATTERSON  
7:45-9:00 p. m., Monday

Identical with Photoplay composition e3, but offered in the Spring Session.

## PHYSICAL EDUCATION

*(For men students only)*

**Physical education eA1-A2—Gymnastics and games.** Credit 1, IV. 2 points each Session. Mr. C. J. MERNER  
8:30-9:20 p. m., Monday, Wednesday, and Thursday. University Gymnasium. Fee \$16 each Session

This course comprises free exercises with and without hand apparatus and chest-weight exercises; simple work on gymnastic apparatus, such as horizontal ladder, horizontal bar, ropes, buck, horse, etc., gymnasium games.

Students taking this course for credit in Columbia College will be required to attend one hour a week (hour to be arranged with the instructor) a course in hygiene and sanitation during the Winter Session and to pass an examination in swimming during the Spring Session.

**Physical education eW1-W2—Wrestling.** 2 points each Session. Fee \$16 each Session. Mr. A. PETERSON  
Section 1—7:30-8:30 p. m., Thursday. University Gymnasium  
Section 2—8:30-9:30 p. m., Thursday. University Gymnasium

**Physical education eY1-Y2—Swimming.** 2 points each Session. Fee \$16 each Session. Mr. E. T. KENNEDY  
Section 1—8:30-9 or 9-9:30 p. m., Monday. University Gymnasium  
Section 2—8:30-9 or 9-9:30 p. m., Wednesday. University Gymnasium  
Section 3—8:30-9 or 9-9:30 p. m., Thursday. University Gymnasium

Students may receive instruction on either Monday, Wednesday, or Thursday, and will have the privilege of using the swimming-pool on the remaining evenings.

**Physical education eZ1-Z2—Boxing.** 2 points each Session. Fee \$16 each Session. Mr. G. WEEMAN  
Section 1—7:30-8:30 p. m., Thursday. University Gymnasium  
Section 2—8:30-9:30 p. m., Thursday. University Gymnasium

Students have the privilege of using the gymnasium and swimming-pool Monday, Wednesday and Thursday evenings from 8 to 10 o'clock.

**For courses in Hygiene, see pp. 95, 96**

## PHYSICS

**Physics eA1-A2—Elementary course in general physics.** 3 hours' lectures and recitations, with 2 hours' laboratory work a week. Credit I, IV. 4 points each Session. Fee \$32 each Session. Professor L. B. MORSE and assistants

7:30-9 p. m., Monday and Thursday lectures. Room 304 Fayerweather. The laboratory work is done in sections of 12 students each, the number of sections and the hours depending upon the number registering for the course.

In 1919-1920 the sections met as follows:

Section 1—Monday 5:30-7:30 p. m.

Section 2—Monday 9-11 p. m.

Section 3—Tuesday 4-6 p. m.

Section 4—Wednesday 5-7 p. m.

Section 5—Thursday, 5:30-7:30 p. m.

Section 6—Thursday 9-11 p. m.

In assigning students to laboratory sections preference will be given to those who register first.

An introductory course in physics for students who wish to become acquainted with the results, methods and spirit of science, whether they intend to pursue its study further or wish an elementary knowledge of physics as a matter of general interest. A knowledge of elementary algebra and geometry is required. Trigonometry although desirable is not required.

The demand for this course has frequently exceeded the accommodations; hence early registration and perfect attendance are advised.

**Physics eA4—Elementary course in general physics: mechanics, properties of matter and sound.** Same as eA1, but repeated in the Spring Session. 3 hours' lectures and recitations with 2 hours' laboratory work a week. Credit I, IV. 4 points Spring Session. Fee \$32

7:30-9 p. m., Tuesdays and Fridays, lectures

Laboratory hours to be arranged.

## POLISH (See Slavonic, p. 113)

## POLITICS (See Government and Public Law, pp. 78-81)

## PSYCHOLOGY

**Psychology e1—Elements of psychology.** Lectures, demonstrations, discussions and recitations. Credit I, IV. 3 points Winter Session. Fee \$24. Professor R. S. WOODWORTH, Messrs. P. S. ACHILLES and H. E. JONES

Section 1—4:45-6:00 p. m., Monday and Thursday. Room 407 Schermerhorn

Section 2—7-8:15 p. m., Tuesday and Friday. Room 407 Schermerhorn

This is the basal course and covers the field of psychology as comprehensively as possible. Instinct and emotion, sensation and perception, habit and memory, imagination, reasoning, will, and personality are the main topics.

**Psychology e2a—Elements of psychology.** Lectures, demonstrations, discussions and recitations. Credit I, IV. 3 points Spring Session. Fee \$24. Professor R. S. WOODWORTH, Messrs. P. S. ACHILLES and H. E. JONES

Section 1—4:45-6:00 p. m., Monday and Thursday

Section 2—7-8:15 p. m., Tuesday and Friday

Psychology e1 repeated in the Spring Session.



Complete in one session. Students wishing to study further in this subject should elect either e3 or e4a in the following session

**Psychology e3—Experimental psychology.** Lectures, readings and laboratory work. Credit I, IV. 3 points Winter Session. Professor R. S. WOODWORTH and Miss F. EDITH CAROTHERS

7-8:40 p. m., Tuesday and Friday. Room 407a Schermerhorn. Fee \$24

This course makes a suitable continuation of Psychology e1 or e2a, affording opportunity for more concrete and intensive study of practice, memory, imagination, judgment, perception, feeling, and other topics.

**Psychology e4a—Experimental psychology.** Credit I, IV. 3 points Spring Session. Professor R. S. WOODWORTH and Miss F. EDITH CAROTHERS.

7-8:40 p. m., Tuesday and Friday. Fee \$24

Psychology e3 repeated in the Spring Session.

**Psychology e5-6—Psychology for nurses and social workers.** Lectures and discussion. Credit IV. 2 points each Session. Dr. KATHARINE MURDOCH  
8-9:40 p. m., Wednesday. Room 407a Schermerhorn. Fee \$16 each Session

This course gives briefly the fundamental principles of psychology, stressing constantly their application in social situations arising in the practice of nursing and other forms of community service. Instinct, habit, individual differences, and the influence of heredity and environment will receive special consideration.

**Psychology e131-132—Mental hygiene.** Credit II. 3 points each Session. Dr. C. I. LAMBERT

5-6:40 p. m., Monday. Room 407a Schermerhorn. Fee \$24 each Session

The causes, treatment, prevention, and social significance of mental defects and disorders will be considered in a way to appeal specially to the social worker. Institutions will be visited, and an evening a month devoted to conferences and special lectures.

**Psychology e145—Vocational and industrial psychology.** Credit II, IX. 3 points Winter Session. Professors H. L. HOLLINGWORTH and A. T. POFFENBERGER

4:30-6:10 p. m., Wednesday. Special conferences will be arranged for students with practical and research problems. Room 407 Schermerhorn. Fee \$24

Psychological methods and principles applied to the problems of human engineering, in such fields as vocational guidance, the selection of employees, management and organization of personnel, industrial time and motion study, job-analysis, trade-testing, and the personal and environmental conditions of effective and satisfying work. Illustrated by concrete demonstrations and by the results of current studies in the field. This course may be appropriately followed by Business e118a or accompanied by Business e117.

**Psychology e146a—Vocational and industrial psychology.** Credit II, IX. 3 points Spring Session. Professor A. T. POFFENBERGER

7:40-9:30 p. m., Monday. Fee \$24

This course is identical with Psychology e145, but is given in the Spring Session and in the evening. It may be appropriately preceded by Business e117 or accompanied by Business e118a.

**Business e117—The psychology of advertising and selling.** Credit II, IX. 3 points Winter Session. Professors H. L. HOLLINGWORTH and A. T. POFFENBERGER



7:40-9:30 p. m., Monday. Special conferences will be arranged for students with practical and research problems. Room 307 Philosophy. Fee \$24

Application of psychological principles and experimental methods to the problems of appeal and response in advertising and selling. Analysis and evaluation of the methods and devices of publicity on the basis of (1) the known facts of human nature; (2) detailed examination of actual advertising campaigns and analysis of their results; (3) application of laboratory and statistical technique; and (4) comparative study of old and new methods of marketing. The material for the entire course is based on the findings of experimental investigation and the results of actual sales campaigns. Illustrated by lantern slides and current publicity materials. This course may be appropriately followed by Psychology e146a or accompanied by Psychology e145.

**Business e118a—The psychology of advertising and selling.** Credit II, IX. 3 points Spring Session. Professor A. T. POFFENBERGER  
4:30-6:10 p. m., Wednesday. Fee \$24

This course is identical with Business e117, but is given in the Spring Session in the afternoon. It may be appropriately preceded by Psychology e145 or accompanied by Psychology e146a.

**Psychology e165-166—Social psychology.** Credit II. 3 points each Session. Professor R. S. WOODWORTH

7-8:40 p. m., Monday. Room 407a Schermerhorn. Fee \$24 each Session

Course e165 will consider the instinctive basis of social behavior, the role of imitation and suggestion, of habit and of invention, and will attempt a psychological analysis of such social phenomena as fashion, loyalty, morale, unrest, radicalism and conservatism. Course e166 will examine the mental constitution of the social group, the distribution of intelligence and morality, the influence of heredity and environment, the mental status of delinquents and dependents and the motivation of social behavior.

**Psychology e305-306—Psychological seminar.** Credit II. 3 points each Session. Professors R. S. WOODWORTH, H. L. HOLLINGWORTH and A. T. POFFENBERGER

7:30-10 p. m., Thursday. Room 407a Schermerhorn. Fee \$24 each Session

Recent advances and present activities in psychology are followed in the literature and through reports from professors and students on the fields of their special interests and researches. In 1920-1921 these reports will include a series of conferences by Professor Woodworth on the topic of "Dynamogenesis," by Professor Hollingworth on "The Psychology of Judgment," and by Professor Poffenberger on "The Subconscious."

## PUBLIC HEALTH (Sociology e109, p. 116)

### RELIGIOUS EDUCATION

The Department of Extension Teaching in cooperation with the New York City Sunday School Association will offer courses in religious education during the academic year 1920-1921. The courses will be given on Monday evening at 8 p. m. from October to March, and will cover the work of a single term or Session. They are intended for officers and teachers of church schools of religion, directors of religious education, pastors, leaders of training classes, and students of education in general.

They will be accepted for matriculated students for the degrees of Columbia University on the approval of the School and Department concerned. They lead also to the diploma of the International Sunday School Association. The subjects

treated are Biblical history and literature, Educational theory, Supervision and management, Child study.

All students registered under the New York City Sunday School Association must pay a fee of \$2 for the course; all others and students who desire to count their courses for academic credit must pay at the rate of \$8 per point, and register in the Department of Extension Teaching, Columbia University.

A circular giving details will be sent on application to the Secretary of Columbia University, or to the New York City Sunday School Association, 1 Madison Avenue.

## ROMANCE LANGUAGES

All the courses in Romance Languages in Extension Teaching are under the general supervision of Professor J. L. Gerig; office hours 4-4:30 p. m., Monday and Thursday, Room 506 Philosophy.

### *French*

**French eA1-A2—Elementary course.** Credit I, IV. 4 points each Session. Fee \$32 each Session. Dr. L. H. ALEXANDER, Messrs. J. G. ANDISON, J. H. ENGLISH, L. FERARU, J. H. HARRIS, P. de LA ROCHELLE, A. P. SPRINGER, and F. VEXLER

Section 1—1:30-2:55 p. m., Monday, Wednesday, and Thursday. Room 610 Journalism

Section 2—2-3:10, Tuesday; 1:30-3 p. m, Wednesday and Friday. Room 403 Avery

Section 3—3-4:25 p. m., Monday, Wednesday, and Thursday. Rooms 303, 307 Hamilton

Section 4—3-4:25 p. m., Tuesday, Wednesday, and Friday. Room 309 Hamilton

Section 5—4:30-5:55 p. m., Monday, Wednesday, and Thursday. Rooms 303, 307 Hamilton

Section 6—4:30-5:55 p. m., Tuesday, Wednesday, and Friday. Rooms 309, 307 Hamilton

Section 7—7-8:15 p. m., Monday; 7-8:45 p. m., Wednesday, and 7-8:15 p. m., Thursday. Room 303 Hamilton

Section 8—8:30-9:55 p. m., Tuesday, Wednesday, and Friday. Room 307 Hamilton

*College sections 9 and 10 limited to men matriculated in Columbia College.*

Section 9—11-11:50 a. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 611 Journalism. Dr. J. L. PERRIER

Section 10—1:10-2 p. m., Monday, Wednesday, and Friday. Room 408 Hamilton; 2:10-3 p. m., Tuesday and Thursday. Room 408 Hamilton. Mr. G. T. WILKINSON

This course is intended for students who have no previous knowledge of French.

The instruction is planned so as to enable students to read at sight ordinary French prose. Reading and oral drill will constitute a large part of the work of the course. In connection with the reading, a careful study of the essentials of grammar and syntax will be taken up, together with simple composition. Attention will be paid to correct pronunciation, and as far as possible to the understanding of simple spoken French.

**French eA3-A4—Elementary course.** Credit I, IV. 2 points each Session.  
Dr. H. J. SWANN

9-10:40 a. m., Saturday. Room 603 Journalism. Fee \$16 each Session

Courses eA3-A4 are together equivalent to French eA1.

For description of course, see French eA1-A2 p. 103

**French eA5-A6—Elementary course.** Credit I, IV. 2 points each Session.  
Dr. H. J. SWANN

11 a. m.-12:40 p. m., Saturday. Room 610 Journalism. Fee \$16 each Session

Courses eA5-A6 are supplementary to French eA3-A4, and are together equivalent to French eA2.

Prerequisite: Half year of college French or equivalent.

**French eA8—Elementary course.** Credit I, IV. 4 points Spring Session.  
Hours to be arranged. See Announcement of Spring Session. Fee \$32

Equivalent to French eA1 given in the Spring Session for students who enter at that time.

**French eA9—Elementary course.** Credit I, IV. 4 points Winter Session.  
Fee \$32. Professor J. C. DAWSON, Messrs. J. G. ANDISON, J. H. ENGLISH, and P. DE LA ROCHELLE

Section 1—3-4:25 p. m., Monday, Wednesday, and Thursday. Rooms 402, 406 Hamilton

Section 2—4:30-5:55 p. m., Tuesday, Wednesday, and Friday. Rooms 603, 607 Hamilton

Section 3—4:30-5:55 p. m., Monday, Wednesday, and Thursday. Rooms 609, 613 Hamilton

Section 4—7-8:15 p. m., Tuesday: 7-8:45 p. m., Wednesday and 7-8:15 p. m., Friday. Room 309 Hamilton

Equivalent to French eA2. Planned also for students who began the study of French in the Summer Session.

Prerequisite: Half year of college French or equivalent.

**French eB1-B2—Intermediate course—grammar, reading, and composition.** Credit I, IV. 4 points each Session. Fee \$32 each Session. Dr. T. CLARK, Messrs. J. H. ENGLISH, L. FERARU, and J. H. HARRIS

Section 1—3-4:25 p. m., Monday, Wednesday, and Thursday. Rooms 408, 501 Hamilton

Section 2—3-4:25 p. m., Tuesday, Wednesday, and Friday. Rooms 609, 613 Hamilton

Section 3—4:30-5:55 p. m., Monday, Wednesday, and Thursday. Rooms 701, 516 Hamilton

Section 4—4:30-5:55 p. m., Tuesday, Wednesday, and Friday. Room 617 Hamilton

The work will include a review of the essentials of grammar, exercises in composition, and much oral practice in reading and conversation. The reading will consist of narrative and historical texts and several plays. For an evening section of French eB1-B2, students are recommended to take French eJ1-J2.

Prerequisite: One year of college French or equivalent.



**French eB3-B4—Intermediate course—grammar, reading, and composition.** Credit I, IV. 2 points each Session. Mr. L. FERARU

11 a. m.—12:40 p. m., Saturday, Room 511 Journalism. Fee \$16 each Session

Courses eB3-B4 are together equivalent to French eB1.

Prerequisite: One year of college French or equivalent.

**French eB8—Intermediate course—grammar, reading, and composition.** Credit I, IV. 4 points Spring Session

Hours to be arranged. See Announcement of Spring Session. Fee \$32

Equivalent to French eB1, given in the Spring Session.

**French eB9—Intermediate course—grammar, reading and composition.** Credit I, IV. 4 points Winter Session. Fee \$32. Professor J. C. DAWSON, Miss HÉLÈNE BIÉLER, and Mr. J. G. ANDISON

Section 1—4:30–5:55 p. m., Monday, Wednesday, and Thursday. Rooms 307 Engineering and 301 Mines

Section 2—4:30–5:55 p. m., Tuesday, Wednesday, and Friday. Rooms 716 Hamilton and 307 Havemeyer

Section 3—7–8:15 p. m., Monday; 7–8:45 p. m., Wednesday; and 7–8:15 p. m., Thursday. Room 406 Hamilton

Equivalent to French eB2, given in the Winter Session. For description, see French eB1-B2 above.

Prerequisite: French eB1 or equivalent.

**French eJ1-J2—Intermediate course.** Reading of French newspapers grammar and composition. Credit I. 4 points each Session. Fee \$32 each Session. Mr. A. D. MENUT

7–8:15 p. m., Tuesday; 7–8:45 p. m., Wednesday; 7–8:15 p. m., Friday. Room 402 Hamilton

The work will include primarily intensive reading of journalistic French, a review of the essentials of grammar, and exercises in composition. Specially devised for students looking forward to journalism.

Prerequisite: One year of college French or equivalent.

**French e3-4—Practical course and introduction to French literature: composition, reading, and conversation.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Professors D. BIGONGIARI and H. F. MULLER

Section 1—3:10–4:25 p. m., Monday and Thursday. Room 309 Hamilton

Section 2—4:30–5:45 p. m., Tuesday and Friday. Room 303 Hamilton

The work is to consist of lectures and conversations on the history of French literature, supplemented by the reading of selected works from representative authors.

Equivalent to French 3-4 in Columbia College and Barnard College.

Prerequisite: French eB1-B2 or equivalent.

**French e3a-4a—Practical course and introduction to French literature: composition, reading, and conversation.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Messrs. P. DE LA ROCHELLE and B. FAÏ

Section 1—3:10–4:25 p. m., Monday and Thursday. Room 603 Hamilton

Section 2—8:20–9:35 p. m., Tuesday and Friday. Room 303 Hamilton

Intended for students completing French eB9. French e4a equals French e3, given in the Spring Session; French e3a equals French e4, given in the Winter Session. For description see French e3-4 above.



**French e9-10—Advanced composition and practice in speaking French.**

Credit I, IV. 3 points each Session. Fee \$24 each Session. Mr. H. C. OLINGER  
 Section 1—3:10-4:25 p. m., Monday and Thursday. Room 607 Hamilton  
 Section 2—4:30-5:45 p. m., Tuesday and Friday. Room 502 Hamilton

The objects of this course are to give students a thorough appreciation and a certain facility in the use of the French language as an instrument of expression. The exercises will consist of composition, and conversation, based upon topics of practical everyday French.

Prerequisite: French eB1-B2 or equivalent.

**French e9a-10a—Advanced composition and practice in speaking French.**

Credit I, IV. 3 points each Session. Dr. ALMA DE L. LEDUC

3:10-4:25 p. m., Tuesday and Friday. Room 303 Hamilton. Fee \$24 each Session

French e10a equals French e9, given in the Spring Session; French e9a equals French e10, given in the Winter Session. For description see French e9-10 above.

**French e15-16—Contemporary French writers, 1885-1919.** Credit I.  
 2 points each Session. Professor A. G. H. SPIERS

4:30-6:10 p. m., Monday. Room 309 Hamilton. Fee \$16 each Session

Rapid reading and discussion of significant poetry, novels, and drama of the present day, accompanied by talks on the general tendencies of French thought before and during the war. Conducted in French.

Those wishing to take this course are requested to communicate with Professor Spiers as early as possible so that books may be ordered from abroad.

Prerequisite: French e3-4 or equivalent.

**French e17-18—Synoptic review of the essentials of French.** 2 points each Session. Mr. W. MILWITZKY

1:30-3:10 p. m., Saturday. Room 303 Hamilton. Fee \$16 each Session

This course is intended primarily for teachers and language students; it will consist of three parts: (a) French as it sounds (comprising the French sound units and their transcriptions, syllables, vernacular speech, careful reading, poetry); (b) French as it looks (printed and written signs, capitals, punctuation, paragraphs, etc.); (c) French as it is put together (the study of those underlying principles, historical or psychological, from which spring the various seemingly disjointed rules of French grammar, or make for the exceptions).

**Business eb93-94—Commercial French: intensive training course in spoken French.** Credit IX. 2 points each Session. Professor P. DE BACOURT

4:30-6:10 p. m., Tuesday. Room 707 Journalism. Fee \$16 each Session

To supplement Commercial French b93-94 of the School of Business. Intended to develop facility of speech for commercial purposes.

Prerequisite: French b94 or French 4, or a sufficient command of spoken French to the satisfaction of the instructor.

**French e115-116—Development of nationalism and internationalism in France in the eighteenth century.** Credit II. 3 points each Session. Mr. B. FAÏ

4:30-5:45 p. m., Monday and Thursday. Room 302 Philosophy. Fee \$24 each Session

This course deals with the influence of the American Revolution on the development of political and philosophical ideas in France before and during the French Revolution, as shown especially in literature. Attention will be given to the intellectual relations between the two countries. Lectures and assigned readings, class discussions, and reports on special topics will form the basis of the work. The course will be conducted in French.

Prerequisite: French e3-4 or equivalent.

**French e119-120—French literature in the nineteenth century.** Credit II. 3 points each Session. Mr. B. FAÏ

4:30-5:45 p. m., Tuesday and Friday. Room 302 Philosophy. Fee \$24 each Session

This course deals with trends of thought in the nineteenth century as exemplified by representative works of the chief novelists, dramatists, and poets. After a survey of the Romantic movement special attention will be given to contemporary writers, the contributions of modern France to history and philosophy receiving consideration as well as the tendencies and development of present-day literature. Lectures and assigned readings, class discussions, and reports on special topics will form the basis of the work. Some attention will be given to the literature produced in France as a result of the war. The course will be conducted in French.

Prerequisite: French e3-4 or equivalent.

Equivalent to French 119-120 in the Faculty of Philosophy.

### *Italian*

**Italian eA1-A2—Elementary course.** Credit I, IV. 3 points each Session. Mr. G. BIGONGIARI

4-5:45 p. m., Tuesday and Friday. Room 517 Hamilton. Fee \$24 each Session

The aim of this course is to impart an accurate reading knowledge of modern Italian, together with a correct pronunciation. The work will consist of a careful study of the elements of grammar and syntax, and in Italian e2 special attention will be paid to reading and composition.

Equivalent to Italian A1-A2 as given in Columbia College and Italian 1-2 in Barnard College.

**Italian e3-4—Advanced course.** Credit I, IV. 3 points each Session. Mr. G. BIGONGIARI

7-8:15 p. m., Tuesday and Friday. Room 518 Hamilton. Fee \$24 each Session

This course will consist of advanced reading, composition, and conversation. The two courses together may be considered a preparation for the graduate courses of the Faculty of Philosophy.

Equivalent to Italian 3-4 as given in Columbia College and Barnard College.

### *Rumanian*

**Rumanian e15-16—Intellectual relations between France and Rumania.** 3 points each Session. Mr. L. FERARU

4:30-6 p. m., Thursday. Room 410 East. Fee \$24 each Session

A series of lectures in English on the French influence in Rumania from the beginning of the nineteenth century to the war of 1914-1918.

### *Spanish*

The courses in Spanish A and B are under the direction of Mr. F. CALLCOTT: Office hour, 3-3:30 p. m., Tuesday, Wednesday and Friday, Room 301 University Hall

**Spanish eA1-A2—Elementary course.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Dr. J. A. VAETH, Misses LEILA E. AIKEN, C. EVANGELINE FARNHAM, GRETCHEN TODD, Messrs. E. AGRAMONTE, F. CALLCOTT, and L. A. WILKINS

- Section 1—1:45-3 p. m., Monday and Thursday. Room 502 Hamilton  
 Section 2—1:45-3 p. m., Wednesday and Friday. Room 311 Havemeyer  
 Section 3—3:10-4:25 p. m., Monday and Thursday. Room 502 Hamilton  
 Section 4—3:10-4:25 p. m., Tuesday and Friday. Rooms 307, 402 Hamilton  
 Section 5—4:30-5:45 p. m., Monday and Thursday. Rooms 511, 601 Hamilton  
 Section 6—4:30-5:45 p. m., Tuesday and Friday. Rooms 307, 516 Hamilton  
 Section 7—6:10-7:25 p. m., Monday and Thursday. Room 307 Hamilton  
 Section 8—7-8:15 p. m., Tuesday and Friday. Room 406 Hamilton  
 Section 9—7:30-8:45 p. m., Monday and Thursday. Room 309 Hamilton

The aim of this course is to impart an accurate reading knowledge of modern Spanish together with a correct pronunciation. The work will consist of a careful study of the elements of grammar and syntax; and in Spanish eA2 special attention will be paid to composition.

Equivalent to Spanish A1-A2 as given in Columbia College and Spanish 1-2 in Barnard College.

**Spanish eA8—Elementary course.** Credit I, IV. 3 points Spring Session. Hours to be arranged. See Announcement of Spring Session. Fee \$24

Equivalent to Spanish eA1, given in the Spring Session for students who enter at that time.

**Spanish eA9—Elementary course.** Credit I, IV. 3 points Winter Session. Fee \$24. Messrs. N. B. ADAMS, F. CALLCOTT and L. A. WILKINS

- Section 1—4:30-5:45 p. m., Tuesday and Friday. Rooms 609, 613 Hamilton  
 Section 2—6:10-7:25 p. m., Monday and Thursday. Room 402 Hamilton  
 Section 3—8:20-9:35 p. m., Tuesday and Friday. Room 408 Hamilton

Equivalent to Spanish eA2. Planned also for students who begin the study of Spanish in the Summer Session.

**Spanish eA18—Elementary course.** Credit I, IV. 2 points Spring Session. Mr. F. CALLCOTT

3:10-4:50 p. m., Saturday. Fee \$16

A course for students having no knowledge of the language.

**Spanish eA19—Elementary course.** Credit I, IV. 2 points Winter Session. Mr. F. CALLCOTT

3:10-4:50 p. m., Saturday. Room 407 Avery. Fee \$16

Follows Spanish eA18 and is planned for students who have had a quarter year of Spanish.

**Spanish eA21-A22—Elementary course.** Credit I, IV. 2 points each Session. Mr. F. CALLCOTT

1:30-3:10 p. m., Saturday. Room 407 Avery. Fee \$16 each Session

A course for students having no knowledge of the language.

**Spanish eB23-B24—Elementary and intermediate course.** Credit I, IV. 2 points each Session. Mr. L. A. WILKINS

3:10-4:50 p. m., Saturday. Room 408 Avery. Fee \$16 each Session

Continuation of Spanish eA21-A22. Spanish eA21, A22, and B23 are together equivalent to Spanish eA1-A2.

Prerequisite: Half year of college Spanish or equivalent.

**Spanish eB1-B2—Intermediate course—grammar, reading, and composition.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Professor J. L. GERIG, Messrs. F. CALLCOTT, and L. A. WILKINS



Section 1—4:30-5:45 p. m., Tuesday and Friday. Rooms 306, 307 Engineering

Section 2—7-8:15 p. m., Tuesday and Friday. Room 408 Hamilton

Section 3—8:45-10 p. m., Monday and Thursday. Room 303 Hamilton

A continuation of Spanish eA1-A2, in which emphasis will be placed on rapid reading of modern prose, on composition and conversation.

Equivalent to Spanish B1-B2 as given in Columbia College and Spanish 3-4 in Barnard College.

**Spanish eB8—Intermediate course—grammar, reading, and composition.** Credit I, IV. 3 points Spring Session.

Hours to be arranged. See Announcement of Spring Session. Fee \$24

Equivalent to Spanish eB1, given in the Spring Session.

**Spanish eB9—Intermediate course—grammar, reading, and composition.** Credit I, IV. 3 points Winter Session. Fee \$24. Messrs. N. B. ADAMS and F. CALLCOTT

Section 1—1:45-3 p. m., Monday and Thursday. Room 409 Avery

Section 2—6:10-7:25 p. m., Tuesday and Friday. Rooms 307, 501 Hamilton

Equivalent to Spanish eB2, given in the Winter Session. For description, see Spanish eB1-B2 above.

Prerequisite: Spanish eB1 or equivalent.

**Spanish eB11-B12—Intermediate composition, conversational practice, and commercial correspondence.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Mr. E. AGRAMONTE

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 306 Engineering

Section 2—4:30-5:45 p. m., Tuesday and Friday. Room 301 Mines

Section 3—7-8:15 p. m., Monday and Thursday. Room 408 Hamilton

Section 4—8:20-9:35 p. m., Monday and Thursday. Room 408 Hamilton

Section 5—3:30-6 p. m., Saturday. Room 403 Avery

The object of this course is to give the student practice in spoken and written Spanish with special reference to commercial practice, including composition, reading, dictation, and letter writing. Attention will be paid to legal, commercial and technical terms in most common use.

**Spanish e3-4—Practical course and introduction to Spanish literature.** Credit I, IV. 3 points each Session. Mr. L. IMBERT

4:30-5:45 p. m., Tuesday and Friday. Room 701 Hamilton. Fee \$24 each Session

The work consists of advanced composition, conversation, and dictation on the history of Spanish literature supplemented by the reading of selected works by representative authors. Students will be expected to write themes and reports in Spanish.

Prerequisite: Spanish eB1-B2 or equivalent.

Equivalent to Spanish 3-4 as given in Columbia College and Spanish 5-6 in Barnard College.

**Spanish e9-10—Advanced composition and practice in speaking Spanish.** Credit I, IV. 3 points each Session. Mr. J. ORTEGA

3:10-4:25 p. m., Monday and Thursday. Room 609 Hamilton. Fee \$24 each Session

The objects of this course are to give students a thorough appreciation and a certain facility in the use of the Spanish language as an instrument of expression. The exercises will consist of composition, and conversation, based upon topics of practical everyday Spanish.

Prerequisite: Spanish eB1-B2 or equivalent.



**Spanish e15-16—Masterpieces of Spanish literature.** Credit I, IV. 3 points each Session. Mr. J. ORTEGA

4:30-5:45 p. m., Tuesday and Friday. Room 302 Engineering. Fee \$24 each Session

In this course selected passages from the most important works of Spanish literature will be read and explained. Students will be expected to do outside reading and write short essays in Spanish on the topics assigned. The explanations will serve to give a general idea of the leading movements in Spanish literature. Conducted in Spanish.

Prerequisite: Spanish e3-4 or equivalent.

**Spanish e105—Life and customs of Spain.** Credit II, IV. 3 points Winter Session. Mr. L. A. WILKINS

1:30-3:10 p. m., Saturday. Room 408 Avery. Fee \$24

Reading of selections from Spanish authors in which are depicted the genius, political life, diversions, salient historical facts, and customs of Spain. Conducted in Spanish.

Prerequisite: Spanish e3-4 or equivalent.

**Spanish e106—Life and customs of Spanish America.** Credit II, IV. 3 points Spring Session. Mr. L. A. WILKINS

1:30-3:10 p. m., Saturday. Fee \$24

Material selected from Spanish-American authors on topics similar to those mentioned in the outline for Spanish e105 (above). Composition in Spanish on assigned topics. Conducted in Spanish.

**The attention of students in Romance Languages is called to the evening classes in Spoken Language described in a separate bulletin; also to the Announcement of the Division of Modern Languages for advanced courses; and to the class in Linguistics, p. 90**

## SECRETARIAL CORRESPONDENCE

**Secretarial correspondence e1-2—Letter writing.** 3 points each Session. Fee \$24 each Session. Miss STELLA S. CENTER

Section 1—4:30-5:45 p. m., Tuesday and Friday. Room 507 Journalism

Section 2—7-8:15 p. m., Monday and Thursday. Room 707 Journalism

This course is intended for those desiring employment as secretaries, for those desiring to gain facility in various forms of letter writing for personal use, and for those desiring advanced work in the problem of style in written expression. It aims to establish standards of judgment for form and expression in accordance with the best current usage; to comprehend that usage from two angles, a study of the development of letter writing, and an analysis of the principles underlying present letters; to develop individuality of style. The purpose of the course is to give constant practice in writing business and social letters, with critical work on current letters and study of the best published letters. The Winter Session consists of drill in conventions of form, and in the essential qualities of all letters; the emphasis is upon the letter as an expression of the relation between the writer and the receiver. The Spring Session offers a study of the letter as a social and personal document, with work toward flexibility and power of individual expression.

English eA1-eA2 or its equivalent in collegiate composition training is prerequisite.

## SECRETARIAL STUDIES

The University offers through its School of Business and the Department of Extension Teaching classes in secretarial studies. In Extension Teaching these courses normally require two years.

A special circular will be sent on application to the Secretary of Columbia University.

**SERB**, see **Serbo-Croatian**, p. 114

## SLAVONIC

*History*

**History e125—History of Russia.** Lecture-study course. Credit II. 3 points Winter Session. Professor J. D. PRINCE

4-5:40 p. m., Wednesday. Room 701 Philosophy. Fee \$24

The work will cover a careful treatment of Russian history from the earliest times to the modern period, with a discussion of the attitude of Russia during the present war and a brief survey of its political development. Special native lecturers will address the class on modern Russian political thought. In connection with this work should be noted the following course which stands in close relation to the history of Russia and is a desirable supplement in order to understand Russian development.

**History e126—History of Poland, Bohemia, Serbia, and Bulgaria.** Credit II. 3 points Spring Session. Professor J. D. PRINCE

4-5:40 p. m., Wednesday. Fee \$24

The work will be supplemented by special lectures given by native experts on the present situation in the new Slavonic states of Poland, Czecho-Slovakia and the Kingdom of the Serbs and Croats.

**History e103-104—The history of the Eastern question.** Lectures and conferences. Credit II. 3 points each Session. Fee \$24 each Session. Mr. V. H. KALENDERIAN

Section 1—7:30-9:10 p. m., Tuesday. Room 403 Avery

Section 2—4:30-6 p. m., Tuesday. Room 409 Avery

This course deals with the fate of the Ottoman Empire in Europe, Asia and Africa. A brief survey of the Byzantine and Latin Empires; the conquests of the Turks; the fall of Constantinople and its influence on the successive phases of European diplomacy. The history of the Eastern question during the eighteenth century. Napoleon's Oriental projects; the Holy Alliance and the Eastern question up to the present time, including the present war.

Attention is to be given, with the historical side of the question involving the national and international aspects, to the racial characteristics, the religious, economic and social conditions and cultural background of the peoples involved.

*Slavonic*

**Slavonic e111-112—The cultural background of the foreign-born in America, especially those of Slavonic origin.** Credit II. 3 points each Session. Mr. V. H. KALENDERIAN

10-11:30 a. m., Saturday. Room 403 Avery. Fee \$24 each Session

This course deals with the various immigrant groups in America and aims to describe briefly the essential points of the native culture of each, the causes of immigration to America, and an evaluation of the special contribution which each has to make toward the development of

American culture. Each race will be treated, so far as practicable, by one of its prominent representatives in America.

The students will be given in advance a prepared statement covering the salient facts of the geographical and occupational distribution of each racial group in America.

For further information consult special circular

### *Russian*

**Russian e102—The elements of the Russian language with instruction in reading, writing, and speaking.** Credit II. 3 points Spring Session. Dr.

C. A. MANNING

4-5:40 p. m., Tuesday. Fee \$24

The object of this course is to enable students to begin their study of the Russian language in the Spring Session.

**Russian e107-108—Elementary course. Russian grammar with instruction in reading, writing, and speaking.** Credit II. 3 points each Session. Fee \$24 each Session. Mr. I. S. ANDREEVSKI

Section 1—3-5 p. m., Friday, Winter Session. Room 409 Avery

Section 2—6-7 p. m., Tuesday and Friday, Winter and Spring Session. Room 409 Avery

This course is intended for beginners and aims primarily to familiarize the student with the common vocabulary and the fundamental grammatical facts of the language, so as to enable him to read ordinary Russian at sight.

NOTE: This course may be supplemented by Russian cXI-X2, which is conducted in coordination with e107-108, and is designed to give an additional oral drill (See the Announcement for the Course in Spoken Language).

**Russian e109-110—Advanced course. Reading and composition.** Credit II. 3 points each Session. Fee \$24 each Session. Mr. I. S. ANDREEVSKI

Section 1—4-6 p. m., Monday. Room 410 East

Section 2—6-8 p. m., Monday. Room 409 Avery

The chief work will consist of exercises in composition, both oral and written, based on the reading of selected works from modern prose writers and on topics of everyday life.

Intended for students who have had Russian e107-108, or an equivalent knowledge.

NOTE: This course may be supplemented by Russian cX3-X4, which is conducted in coordination with e109-110, and is designed to give an additional practice in conversation (See the Announcement for the Courses in Spoken Language).

**Russian e111-112—Practical course and introduction to Russian literature in the original. Advanced composition, reading, and conversation.** Credit II. 3 points each Session. Mr. I. S. ANDREEVSKI

4-5 p. m., Wednesday and Thursday, and an additional conference hour to be arranged to suit the convenience of the student. Room 403 Avery. Fee \$24 each Session

The work will consist of lectures and conversations on the history of Russian literature, supplemented by the reading of selected works from representative authors in the original Russian.

Prerequisite: Russian e109-110 or an equivalent knowledge.

**Russian e115-116—Problems of Russian democracy in the light of the intellectual past of Russia.** Credit II. 3 points each Session. Mr. I. S. ANDREEVSKI

4-5:40 p. m., Friday, Winter Session, Room 410 East; 4-5:40 p. m., Thursday, Spring Session, Room 407 Avery. Fee \$24 each Session

It is the aim of this course to offer in a series of lectures in English, an historical outline of the development of Russian thought and ideals, recorded in the most prominent literary productions of the nation for the last hundred and fifty years.

Pointing out in this survey the inevitable connection, interdependence and mutual reaction between the literature and the history of the country, an endeavor will be made to explain the most characteristic aspects of Russian literature and, parallel to this, to estimate the nature of the Russian Revolution in the light of the historical and intellectual past of Russia.

Open to all qualified students.

**Russian e117-118—History of Russian literature.** Credit II. 3 points each Session. Dr. C. A. MANNING

4-5:40 p. m., Thursday. 311 Havemeyer. Fee \$24 each Session

The lectures in this course will cover the history of Russian literature since the beginning of the nineteenth century. Special attention will be paid to the important writers as Pushkin, Gogol, Turgeniev, Tolstoy, and Dostoyevsky as well as to the more modern developments.

Open to persons unfamiliar with Russian.

### *Polish*

**Polish e101-102—Elementary Polish.** Credit II. 3 points each Session. Dr. A. MORAWSKI-NAWENCH

7:15-9 p. m., Wednesday. Room 308 Philosophy. Fee \$24 each Session

Elementary course in the Polish language, followed by easy readings with written and oral exercises.

Open to persons unfamiliar with Polish.

**Polish e105-106—Advanced Polish.** Credit II. 3 points each Session. Dr. A. MORAWSKI-NAWENCH.

7:15-9 p. m., Tuesday. Room 308 Philosophy. Fee \$24 each Session

Advanced course in the Polish language. Readings, written and oral exercises.

Prerequisite: Polish e101-102 or equivalent knowledge.

**Polish e107-108—History of the political and cultural evolution of Poland.** Credit II. 3 points each Session. Dr. A. MORAWSKI-NAWENCH

4:30-6 p. m., Tuesday. Room 410 East. Fee \$24 each Session

This course deals with the development of Polish democratic thought and ideals from the earliest times, together with the literary and artistic movements dependent upon them. The work during the Winter Session will cover the period up to the Peace of Tilsit in 1807. The work in the Spring Session will deal with the developments since that time, including the reconstruction of Poland.

Open to persons unfamiliar with Polish.

### *Czecho-Slovak (Bohemian)*

**Czech e101-102—Elementary Czech with exercises in conversation, reading, and composition.** Credit II. 3 points each Session. Mr. A. B. KOUKOL

7-8 p. m., Monday and Thursday. Room 302 Philosophy. Fee \$24 each Session

Open to persons unfamiliar with Czecho-Slovak.



**Czech e103-104—Lectures on the development of the Czecho-Slovak literature and the national life in modern times.** Credit II. 3 points each Session. Mr. A. B. KOUKOL

8-9 p. m., Monday and Thursday. Room 302 Philosophy. Fee \$24 each Session

This course will cover especially the period beginning with the rebirth of the Czecho-Slovak people toward the end of the eighteenth century. Emphasis will be laid on the close connection between the present aspirations and accomplishments of this nation and their earlier literary and intellectual endeavors. As an introduction, a few lectures will be devoted to a brief survey of the development of the Czecho-Slovak early literature and of its subsequent decline after Bohemia's loss of political independence in 1620.

Open to persons unfamiliar with Czecho-Slovak.

### *Serbo-Croatian*

**Serb e101-102—Elementary Serbo-Croatian.** Credit II. 3 points each Session. Mr. J. KAYGANOVICH

7-8 p. m., Monday and Wednesday. Room 518 Hamilton. Fee \$24 each Session

Exercises in conversation, reading, and composition.

Open to persons unfamiliar with Serbo-Croatian.

**Serb e103-104—Lectures on the Serbo-Croatian literary development.** Credit II. 3 points each Session. Mr. J. KAYGANOVICH

8-9 p. m., Monday and Wednesday. Room 518 Hamilton. Fee \$24 each Session

Special attention will be paid to the traditional epics handed down by the National Bards as well as the modern literary movements.

Open to persons unfamiliar with Serbo-Croatian.

### *Armenian*

**Armenian eA101-102—The elements of the Armenian language with instruction in reading, writing, and speaking.** Credit II. 3 points each Session. Mr. V. H. KALENDERIAN

3-4 p. m., Tuesday and Thursday. Room 409 Avery. Fee \$24 each Session

This course is designed to give to students a working knowledge of the Armenian language.

**Armenian e112—History and culture of the Armenians.** Credit II. 3 points Spring Session. Mr. V. H. KALENDERIAN

4:15-6 p. m., Thursday. Fee \$24

The course will present a careful treatment of the history of Armenia from its earliest times to the present period, including her civilization and colonies in various parts of the world. It will cover a discussion of the Armenian question especially during the years 1829 to 1914, the recent massacres and deportations, the part played by the Armenians in the World War, and the problem of her political reconstruction.

Attention is also called to the courses in Spoken Language (see special circular) and to the classes in Chinese, pp. 54, 55; and Linguistics e102, p. 90.

Slovak, see Czecho-Slovak, pp. 113, 114

## SOCIOLOGY

**Sociology e1—Community service: the development of popular participation in community work.** Lectures, readings, and field service. Credit IV. 2 points Winter Session. Mr. L. E. BOWMAN

3:10-4 p. m., Wednesday and Friday. Room 408 Avery. Fee \$16

Methods of eliciting response to social service, public health, recreation and other neighborhood cooperative projects. Designed for the organizers of specialized organizations.

**Sociology e2—Community service: the organization of general support for specialized neighborhood activities.** Lectures, readings and field service. Credit IV. 2 points Spring Session. Mr. L. E. BOWMAN

2:10-3 p. m., Wednesday and Friday. Fee \$16

Continuation of Sociology e1. Designed for workers in special community projects aiming at more democratic organization.

**Sociology e51—Forms of community organization.** Lectures and readings. Credit IV. 2 points Winter Session. Mr. L. E. BOWMAN

3:10-4 p. m., Tuesday and Thursday. Room 515 Kent. Fee \$16

A sociological survey of the forms of popular government in history. Popular control of group activities in foreign countries. Comparative efficacy of various forms of community organization. Principles of group control as shown in historical development of communities. The mir, the mark, the medieval town, the English village.

**Sociology e52—Community organization in the United States.** Lectures and readings. Credit IV. 2 points Spring Session. Mr. L. E. BOWMAN

3:10-4 p. m., Tuesday and Thursday. Fee \$16

Survey of forms of community organization in the United States. Types of present-day communities. Experiments in socialization. Extensive community organization compared with neighborhood socialization. The Community Council, the Community Center, the Neighborhood Association, Community Service, Social Unit, the block organization, clubs, leagues, sub-organization.

**Sociology e53—Principles of community organization.** Lectures, readings, and laboratory. Credit IV. 2 points Winter Session. Mr. L. E. BOWMAN

4:10-5 p. m., Tuesday and Thursday. Room 614 Kent. Fee \$16

Community organization principles. Geographical basis of neighborhood. Ethnic factors. Origin of group ideals. Forms of community action. Implications of trial and error process. Neighborhood tradition. Principles of survey. Utilization of community forces. The development of administrative organization.

**Sociology e54—Neighborhood leadership.** Lectures, readings, and laboratory. Credit IV. 2 points Spring Session. Mr. L. E. BOWMAN

4:10-5 p. m., Tuesday and Thursday. Fee \$16

Personal aspects in community activities. Adaptability and fluidity of organization. Motives and methods of leaders. Control of the led. Sympathy of leader and led. Group control of the leader. Potential leadership. Development of the place of the leader. Mobilization of forces. Establishment of a community technique. Steps in the establishment of leadership.

**Sociology e55—The practice of community organization: principles and methods.**—Lectures, round table, field service. Credit IV. 2 points Winter Session. Mr. L. E. BOWMAN

7:30-9:10 p. m., Monday. Room 503 Kent. Fee \$16

Special problems of organization. Round table discussion of field work. Lectures and round table by specialists and community organizers

**Sociology e56—Practical programs of community organizations.** Lectures, round table, field service. Credit IV. 2 points Spring Session. Mr. L. E. BOWMAN

7:30-9:10 p. m., Monday. Room 503 Kent. Fee \$16

The formulation and development of complete programs of community recreation, health, civics, socialization, art, etc. Methods, means and agencies to be dealt with. Lectures and round table discussion by specialists.

**Sociology e109—Public health and standard of living.** Credit II, IV. 3 points Winter Session. Professor R. E. CHADDOCK

4:10-6 p. m., Friday. Room 615 Kent. Fee \$24

This course treats in lectures, reports and discussions, the various phases of human conservation, and their economic and social significance. New conditions emphasize as never before the importance of measures to promote infant and child welfare; to improve the health of school children; and to protect, at all stages of their industrial life, the workers of industry. The standards of physical fitness for army service have revealed the consequences of past neglect. Records of physical defects, illness, mortality, individual output in industry acquire a national importance. The administration of health-promoting activities and the protection of the standard of living are becoming matters of national concern.

**Sociology e141—Practical applications of sociology.** Lectures, readings, discussions, and exercises. Credit II, IV. 3 points Winter Session. Mr. H. N. SHENTON

7:40-9:30 p. m., Thursday. Room 614 Kent. Fee \$24

A study of social conditions and processes with a view to determining procedure and policies for readjustment and reconstruction. Population, growth, distribution, density and composition. Migration, international and intra-national. Studies of race mixture, social heterogeneity, standards of living, conflicts of interests, etc. Constructive means for regulation of population movements and for assimilation or Americanization.

**Sociology e142—Practical applications of sociology.** Lectures, readings, discussions, and exercises. Credit II, IV. 3 points Spring Session. Mr. H. N. SHENTON

7:40-9:30 p. m., Thursday. Fee \$24

The development of movements for human betterment, including eugenics, euthenics, social legislation, socialized philanthropy, and social education. Problems of normal and abnormal society. Constructive sociological criticisms of various methods of social reform.

**Sociology e143—Problems of democracy.** Lectures, readings, discussions. Credit II, IV. 3 points Winter Session. Mr. H. N. SHENTON

7:40-9:30 p. m., Tuesday. Room 615 Kent. Fee \$24

An analysis of democratic society, its structure and behavior. The social relations of individuals essential to democratic functioning. Collective decision. Democratic procedure. Social self-control and social self-determination. Leadership. Standardization *vs.* individualism. Democratic *vs.* paternalistic or anarchistic behavior. Costs of democratic behavior. Advantages. Although historical data will be used, most of the data will be current and as far as possible such as will permit of statistical analysis.

**Sociology e144—Problems of democracy.** Lectures, readings, discussions. Credit II, IV. 3 points Spring Session. Mr. H. N. SHENTON

7:40-9:30 p. m., Tuesday. Fee \$24

A study of social institutions, an inquiry as to the kind of institutions essential to a democracy and an examination of the nature and tendencies of existing social institutions. The development of institutions from folkways, customs and *mores*. Kinship, religious, educa-



tional, political, and industrial institutions as well as those relating to property, sex, publicity, health, and recreation will be studied.

**Sociology e145—Social aspects of the class struggle: backgrounds, conditions, and forces.** Credit II, IV. 3 points Winter Session. Mr. S. P. DAVIES

7:40-9:30 p. m., Friday. Room 615 Kent. Fee \$24

Origin and nature of social classes. Underlying social forces. Causes of conflict. Class differentiations in various stages of social organization. Relation of general social conditions to the intensity of class strife. Recent trend of the struggle. Present-day evidences of conflict: labor unrest and popular uprisings. Class solidarity as an international phenomenon.

**Sociology e146—Social aspects of the class struggle: programs and policies.** Credit II, IV. 3 points Spring Session. Mr. S. P. DAVIES

7:40-9:30 p. m., Friday. Fee \$24

Possibility of social control of conditions underlying class warfare. Class control vs. social control. Class interests and class legislation. Programs of social reconstruction, radical and conservative; their social utility and practicability. Inadequacy of *laissez-faire*. Results of state regulation. Democratization of social institutions in effecting class understanding. International social welfare programs and conferences.

**Sociology e147—Social statistics; principles and methods.** Lectures, readings and laboratory exercises. Credit II, IV. 3 points Winter Session. Mr. F. A. Ross

7:40-9:00 p. m., Tuesday and Thursday. Room 502 Kent. Fee \$24

Elementary principles of statistics and their application to numerical data. Study how to gather and interpret statistical data. The principles underlying the several forms of the average, and measures of dispersion. Index numbers and other statistical measures are explained and analyzed. The methods of computation are taught in laboratory periods.

**Sociology e148—Social statistics; principles and methods.** Lectures, readings, and laboratory exercises. Credit II, IV. 3 points Spring Session. Mr. F. A. Ross

7:40-9:00 p. m., Tuesday and Thursday. Fee \$24

A continuation of Sociology e147. The more advanced subjects of correlation and probable error are dealt with, and also tabulation and graphic presentation. Laboratory work includes computation of coefficients and preparation of charts.

Prerequisite: Sociology e147 or equivalent.

**Sociology e149—Social statistics; principles and methods.** Lectures, readings, and laboratory exercises. Credit II, IV. 3 points Winter Session. Mr. F. A. Ross

7:30-9:30 p. m., Wednesday, and laboratory hour to be arranged. Room 502 Kent. Fee \$24

Sociology e148 given in Winter Session.

Prerequisite: Sociology e150 or equivalent.

**Sociology e150—Social statistics; principles and methods.** Lectures, readings, and laboratory exercises. Credit II, IV. 3 points Spring Session. Mr. F. A. Ross

7:30-9:30 p. m., Wednesday, and laboratory hour to be arranged. Room 502 Kent. Fee \$24

Sociology e147 given in Spring Session.



**Sociology e153-154—Statistical investigation; principles and methods.**

Lectures, readings, and laboratory exercises. Credit II, IV. 3 points each Session. Mr. F. A. Ross

7:30-9:30 p. m., Monday. Room 502 Kent. Fee \$24 each Session

Designed to train students in the prevailing methods of instituting and conducting surveys and secondary statistical investigations. Research in and criticism of published sources of data. Schedule making and editing. Tabulation and table drafting, graphic and tabular presentation. Report making and criticism of reports.

**Sociology e315-316—Seminar.** Discussions, research, and thesis preparation. Credit II. 3 points each Session. Mr. H. N. SHENTON

7:40-9:30 p. m., alternate Mondays, beginning October 4. Room 503 Kent. Fee \$24 each Session

Methods of sociological study and research. Sociological sources. Work supplementing the Extension Teaching courses in sociology, covering especially social assimilation, social institutions, collective decisions and social organization. Attention will be given to the preparation of the theses required of all candidates for the degree of A.M. in sociology.

*Social Science*

**Social science e3a, b-4a, b—An introduction to the study of modern social and economic organization, conducted in cooperation with Barnard College**

e3a, b-4a, b—Entire course for both Sessions, 8 points. Fee \$64

e3a-4a—Series of lectures on sociology, Winter and Spring Sessions. 2 points each Session. Fee \$16 each Session. Professor W. F. OGBURN

12 m.-1 p. m., Tuesday; 11 a. m.-1 p. m., Thursday. Barnard College

e3b-4b—Series of lectures on economics, Winter and Spring Sessions. 2 points each Session. Fee \$16 each Session. Professor EMILIE J. HUTCHINSON

10 a. m.-12 m., Tuesday; 10-11 a. m., Thursday. Barnard College

Extension Teaching students may by permission elect the Winter or Spring Session in any one of the above courses for either 4 or 2 points. Students not otherwise registered in Extension Teaching will be required to enroll and pay their fees for both Sessions, either for e3a-4a or e3b-4b. They may be permitted to take the entire course e3a, b-4a, b, for both Sessions.

There is no University fee for this course,

The course will open November 9, and close April 28. The course will consist of two series of lectures on economics and sociology.

For full description see special circular.

**SPEECH IMPROVEMENT**

**Speech improvement e1-2—Speech improvement: elementary course.**

Credit IV. 2 points each Session. Miss HANNAH M. CREASEY

9-10:40 a. m., Saturday. Room 408 Avery. Fee \$16 each Session

This course is intended primarily for teachers wishing to specialize in speech improvement. Attention will be given to stuttering, lisping, and cognate defects.

The study of the anatomy and physiology of the speech mechanism, the psychological aspect, the etiology and correction of speech defects and a practical course in phonetics leading to the correction of negligent, cluttered speech will be considered.

Will not be given for less than fifteen students.

**Speech improvement e3-4—Speech improvement: advanced course.**

Credit IV. 2 points each Session. Miss HANNAH M. CREASEY

11 a. m.—12:40 p. m., Saturday. Room 408 Avery. Fee \$16 each Session

This course is intended for teachers wishing to specialize in speech improvement.

The work will be advanced study based on the subjects discussed in the elementary course. Psychopathology of speech defects, and a study of organic defects will be emphasized.

All students will be permitted to gain practical experience at the Speech Clinic connected with the Jersey City Hospital.

Will not be given for less than fifteen students.

**STENOGRAPHY AND TYPEWRITING***Isaac Pitman System*

The courses described below are planned for high school and college graduates who wish to prepare themselves for stenographic or secretarial duties and for students who desire to become teachers of shorthand and typewriting. Classes for beginners are started at the opening of each Winter, Spring, and Summer Session.

In addition to a careful presentation of the principles of stenography and typewriting, instruction is given in the following subjects: Secretarial and stenographic duties; editing; meeting office callers; telephoning; taking dictation; effective arrangement and display of typewriting; various forms and different parts of a letter; preparation of outgoing and incoming mail; commercial abbreviations; office reference books; remittance forms and other commercial papers; shipping and the papers involved; telegrams and cablegrams; practical information for typists; different parts of the typewriter and its care and repair; stencil cutting; operation of the mimeograph. The classroom work is as nearly like that of a business office as it is possible to make it. The touch method of typewriting as practised by rapid operators is taught.

Before receiving credit for courses in stenography and typewriting, students must pass an examination in elementary English, including grammar, composition, spelling, and punctuation. This examination is held regularly on the second Saturday afternoon of the Winter Session and of the Spring Session. All students registered for the morning courses are required to take this examination; any student who fails to obtain a passing grade must take whatever work in English the examiner recommends.

Before receiving final credit for stenography and typewriting, students must complete a week of practice work in the office of the Director.

In Room 509 Journalism Building there is an extensive shorthand library to which students have access.

The courses in stenography and typewriting are under the general supervision of Mr. WILLIAM E. HARNED, Room 509 Journalism. Office hours, 3-4 p. m., Tuesdays and Thursdays.

*Morning Courses*

The morning courses are completed in one college year of thirty weeks. Students completing the courses are able to write shorthand at the rate of one hundred and twenty-five words a minute and to transcribe their notes on the typewriter at the rate of thirty words a minute. To obtain full credit, students registering for stenography are required to take the corresponding course in typewriting, as designated below.

**Stenography e1-2—Elementary and intermediate.** 6 points each Session. Fee \$48 each Session

Section I—11 a. m.—12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 206 Journalism. Mr. W. E. HARNED

Section 2—10-11 a. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 206 Journalism; 1-2 p. m., Monday, Wednesday, Thursday, and Friday. Room 206 Journalism. Miss EMMA B. DEARBORN

Section 3—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 612 Journalism. Mr. J. J. WRIGHT

Section 4—10-11 a. m., Monday, Tuesday, Wednesday, Thursday, and Friday; and 1-2 p. m., Monday, Wednesday, Thursday, and Friday. Room 605 Journalism. Miss ZILLAH K. MACDONALD

Section 5—10-11 a. m., Monday, Tuesday, Wednesday, Thursday, and Friday; and 1-2 p. m., Monday, Wednesday, Thursday, and Friday. Room 507 Journalism. Mr. E. J. RYAN

This course is planned for beginners and should be taken in conjunction with Typewriting e1-2. All secretarial students working for a certificate are required to complete this course and Typewriting e1-2.

**Typewriting e1-2—Elementary and intermediate.** 4 points each Session. Fee \$32 each Session

Section 1—1-2 p. m., Monday, Wednesday, Thursday, and Friday; and 3-4 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 602 Journalism. Mr. W. E. HARNED

Section 2—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 601 Journalism. Miss EMMA B. DEARBORN

Section 3—10-11 a. m., Monday, Tuesday, Wednesday, Thursday, and Friday; and 1-2 p. m., Monday, Wednesday, Thursday, and Friday. Room 601 Journalism. Mr. J. J. WRIGHT

Section 4—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 602 Journalism. Miss ZILLAH K. MACDONALD

Section 5—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 609 Journalism. Mr. E. J. RYAN

This course is planned for beginners and should be taken in conjunction with the corresponding sections of Stenography e1-2.

**Stenography e4—Elementary.** 6 points Spring Session. Fee \$48

Section 1—9-10 a. m. and 11 a. m.-12 m., Monday, Tuesday, Wednesday, Thursday, and Friday. Mr. N. K. BRYANT

Section 2—10-11 a. m. and 11 a. m.-12 m., Monday, Tuesday, Wednesday, Thursday, and Friday. Mr. C. MILLER

This course is planned for beginners and should be taken in conjunction with Typewriting e4.

**Typewriting e4—Elementary.** 4 points Spring Session. Fee \$32

Section 1—10-11 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Mr. N. K. BRYANT

Section 2—9-10 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Mr. C. MILLER

This course is planned for beginners and should be taken in conjunction with Stenography e4.

**Stenography e5—Intermediate.** 6 points Winter Session. Fee \$48

Section 1—9-10 a. m. and 11 a. m.-12 m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 603 Journalism. Mr. N. K. BRYANT

Section 2—9-10 a. m. and 11 a. m.-12 m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 605 Journalism. Mr. C. MILLER

This course is planned for students who have completed Stenography e4 or e1, or the equivalent, and should be taken in conjunction with Typewriting e5. All secretarial students working for a certificate are required to complete this course or Stenography e2 and Typewriting e5.



**Typewriting e5—Intermediate.** (Speed practice and transcription.) 4 points Winter Session. Fee \$32

Section 1—10-11 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 602 Journalism. Mr. N. K. BRYANT

Section 2—10-11 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 609 Journalism. Mr. C. MILLER

This course is planned for students who have completed Typewriting e4 or e1, or the equivalent, and should be taken in conjunction with Stenography e5.

**Stenography e6—Advanced.** 2 points Spring Session. Mr. J. J. WRIGHT  
3:10-4 p. m., Monday, Wednesday, and Thursday. Fee \$16

**Stenography e9-10—Advanced.** 2 points each Session. Miss EMMA B. DEARBORN

3:10-4 p. m., Tuesday, Wednesday, and Friday. Room 601 Journalism. Fee \$16 each Session

All second-year secretarial students who have completed the morning shorthand and typewriting courses, or who have obtained stenographic instruction in other schools, are required to attend one of these courses three days of each week for the whole of the second year. General, business, and legal dictation will be given at a rate varying from one hundred to one hundred and fifty words a minute.

### *Afternoon and Evening Courses*

The courses offered in the afternoon and evening are planned for students who can give only a portion of their time to the study of shorthand and typewriting. Both elementary and continuation classes are started in September and in February. Students registering for stenography are urged to take the corresponding course in typewriting as designated below. After a study of both shorthand and typewriting for forty-five or sixty weeks, students are able to write shorthand at the rate of one hundred words a minute, to transcribe their shorthand notes on the typewriter at the rate of twenty-five words a minute, and to perform the usual stenographic duties in a business office.

**Stenography e11-12—Elementary.** 3 points each Session. Mr. C. MILLER  
5:15-6:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 601 Journalism. Fee \$24 each Session

This course is planned for beginners and should be taken in conjunction with Typewriting e11-12.

**Typewriting e11-12—Elementary.** 2 points each Session. Mr. C. MILLER  
4:15-5:15 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Room 602 Journalism. Fee \$16 each Session

This course is planned for beginners.

**Stenography e14—Elementary.** 3 points Spring Session. Mr. W. E. HARNED  
4-5 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Fee \$24

This course is planned for beginners and should be taken in conjunction with Typewriting e14.

**Typewriting e14—Elementary.** 2 points Spring Session. Mr. W. E. HARNED

5-6 p. m., Monday, Tuesday, Wednesday, Thursday, and Friday. Fee \$16

This course is planned for beginners.



**Stenography e21-22—Elementary.** 2 points each Session. Mr. N. K. BRYANT

7:30–8:30 p. m., Monday, Wednesday, and Friday. Room 610 Journalism  
Fee \$16 each Session

This course is planned for beginners and should be taken in conjunction with Typewriting e21–22.

**Typewriting e21-22—Elementary.** 2 points each Session. Mr. N. K. BRYANT

8:30–9:30 p. m., Monday, Wednesday, and Friday. Room 601 Journalism  
Fee \$16 each Session

This course is planned for beginners.

**Stenography e24—Elementary.** 2 points Spring Session.

8:30–9:30 p. m., Monday, Wednesday, and Friday. Fee \$16

This course is planned for beginners and should be taken in conjunction with Typewriting e24.

**Typewriting e24—Elementary.** 2 points Spring Session

7:30–8:30 p. m., Monday, Wednesday, and Friday. Fee \$16

This course is planned for beginners.

**Stenography e27-28—Intermediate.** 4 points each Session. Mr. E. J. RYAN

7:30–9:30 p. m., Monday, Wednesday, and Friday. Room 605 Journalism.  
Fee \$32 each Session

This course is planned for students who have completed Stenography e21–22 or e24, or the equivalent. It includes dictation or speed practice, transcription of shorthand notes either on the typewriter or in pencil, and speed practice on the typewriter.

## TYPOGRAPHY

**Typography e1—Proof-reading and the preparation of manuscript.** 2 points Winter Session. Mr. J. D. GABLER

4:30–6:10 p. m., Thursday. Room 611 Journalism. Fee \$16

A brief outline of the history of typography and its allied subjects will be followed by a practical explanation of present-day printing methods and a description of the different systems of hand and machine type-setting employed in modern establishments. Detailed instruction will be given in the preparation of manuscript and other material for the printer, and in proof-reading. The work in proof-reading will include drill in the actual correction and revision of galley, page, and final proof, with special attention to spelling, correct division of words, and uniformity in punctuation, capitalization, abbreviations, and minor matters of style. The work is planned to be of special value to authors, editors, secretarial students, students of advertising, printing, and all others who may come in contact with printing.

## VOCATIONAL GUIDANCE

**Vocational guidance e1-2—Vocational guidance of girls.** 2 points each Session. Dr. MABEL L. ROBINSON

7–8:40 p. m., Wednesday. Room 707 Journalism. Fee \$16 each Session

The aim of this course is to induce a more scientific attitude toward advisory work and to give a sound basis for counseling.

The course will include a survey of the field of labor for the place occupied by women; a study of the development and achievements of vocational guidance in the United States as a basis for discussion of methods; a study of the different educational levels from which girls enter vocations and the value at each level of educational guidance; an analysis of the various elements of vocational guidance; the relation of the school curriculum, psychological tests, self-analysis, etc., to the choice of a vocation; an analysis of vocational fields open to girls; a discussion of methods practical for advisers.

This course will count for credit with the Board of Education of New York toward promotion and toward a principal's or assistant principal's certificate.

## ZOOLOGY

**Zoology e1a-2a—Elementary biology and zoology.** Lectures and laboratory. Credit I, IV. 2 points each Session. Professor J. H. MCGREGOR and Dr. H. J. MULLER

1:45-2:35 p. m., Saturday; laboratory, 2:40-4:30 p. m., Saturday. Room 619 Schermerhorn. Fee \$16 each Session

The earlier part of this course is designed to give the student an elementary knowledge of the basic principles of biology and the general physiology of organisms. Protoplasm, the cell, unicellular organisms, plant and animal in relation to each other and to the inorganic world are the chief topics discussed in the Winter Session. The Spring Session is mainly devoted to the study of the structures and adaptations of some of the more important groups of animals, with dissection of types in the laboratory. Among the types studied may be mentioned amoeba, paramecium, hydra, earthworm, lobster, grasshopper, clam, and frog. Practically equivalent to Zoology 1 in Columbia College. This course should be supplemented by Zoology e3-4 to form the one year of biology required by law for pre-medical students.

A text-book will be used and collateral reading assigned.

Prerequisite: Elementary chemistry.

The class will be limited to forty-five students.

**Zoology e3-4—Vertebrate zoology and evolution.** Lectures and laboratory. Credit I, IV. 2 points each Session. Professor J. H. MCGREGOR and Dr. H. J. MULLER

Monday, 7-9:40 p. m.: lecture 7-7:50; laboratory, 7:50-9:40. Room 619 Schermerhorn. Fee \$16 each Session

Equivalent to Zoology 2 in Columbia College and designed to follow Zoology e1a-2a, together with which it fulfils the requirement in biology for pre-medical students. The course begins with the study of the simpler vertebrates, and proceeds to the higher forms through study and dissection of types in ascending order of complexity. The more important laboratory types are amphioxus, dogfish, pigeon and rabbit. The aim of the course is to trace the evolution of vertebrate structure, including that of man. Several of the later lectures are devoted to the chief theories regarding the method of evolution.

Prerequisite: Zoology e1a-2a should precede this course but failing this may be taken concurrently with it.

The class will be limited to forty-five students

## PRACTICAL ARTS

### Officers of Administration for Extension Teaching in the School of Practical Arts

JAMES EARL RUSSELL . . . . .	Dean of Teachers College
MAURICE A. BIGELOW . . . . .	Director of School of Practical Arts
CLIFFORD B. UPTON . . . . .	Provost of Teachers College

The School of Practical Arts of Teachers College, in cooperation with the University Department of Extension Teaching, offers certain courses of instruction to qualified students who have not matriculated in any part of Columbia University as candidates for degrees. Such non-matriculated students will be admitted only to Practical Arts classes which are designated *e* (extension) or *esp* (extension special).

A special application blank for admission to Practical Arts extension classes may be obtained from Desk E, Secretary's Office, Teachers College. It will save delay in registration if this application is filed one or more weeks in advance of registration in September or February.

**Registration for Practical Arts extension courses.** Information concerning such courses may be obtained at Desk E in the office of the Secretary of Teachers College daily 9 a. m.-5 p. m., except Saturday afternoon; and also 7-8 p. m. each evening except Saturday, from September 15 to 26. Written permission to register for Practical Arts courses is given only at Desk E; but students complete registration at the office of the Registrar, University Hall, Columbia University.

Practical Arts extension courses which are announced as having Credit IV may be credited toward the Bachelor of Science degree if satisfactorily completed by non-matriculated students who afterwards matriculate in the School of Practical Arts. The possible credit in points is stated in the description of courses. Students who expect to apply for such credit should have their programs approved by the Director of the School of Practical Arts.

Practical Arts extension special courses (marked *esp*: *e. g.*, **Cookery esp 42**) are intended for popular instruction and cannot be credited toward degrees or entrance requirements. They will be announced in a special circular to be issued in September by the Secretary of Teachers College.

The extension courses in Practical Arts are not open to women under twenty-one years of age who are not residing with their parents or near relatives. Women between twenty-one and twenty-five years must have their residence plans approved before registration by the Welfare Director of Teachers College.

Men or women under twenty-four years who have not graduated from high school, or satisfactorily completed equivalent study, will not be admitted to extension classes in the School of Practical Arts.

An extension student may not register for more than 8 points per Session in any one department of the School of Practical Arts.



*Matriculated students of Teachers College or of other parts of the University who wish to register for part-time programs should choose courses and sections from the Announcement of the School of Practical Arts and should not register as extension students.*

In case of courses marked with \* a limited number of non-matriculated or extension students whose preparation is equal to that of regular students in these courses may be admitted if there are vacancies after 5 p. m. on September 21 or February 1. In the case of all advanced courses the instructor or adviser must be consulted before registration, and if written permission is obtained, it should be presented at Desk E in the Secretary's Office.

Changes of program, such as dropping or adding courses, can be made only at the Registrar's office in University Hall, where the complete records are kept on file. Permission to add or drop Practical Arts courses must be obtained from Desk E in Teachers College before changing programs at the Registrar's office.

*Number of students required* in classes is indicated in descriptions of certain courses. Such classes may be discontinued if the required number of students are not registered before the time for the second lesson.

*Limited classes.* Many classes for practical work are limited as to number of students. Such classes are indicated by the letter L affixed to the course number (e. g., \* **Cookery e3L**). Extension students must reserve places by personal application to the clerk in charge of extension classes, Desk E, Secretary's Office, Teachers College. Places will not be held for students who do not report to the instructor at the first lesson. In case of withdrawal from courses which have a required minimum registration, no fees will be returned unless a substitute wishes to register for the reserved place.

Students who register in the Winter Session for courses which extend throughout the year must at the beginning of the Spring Session call at Desk E, Secretary's Office, Teachers College, and arrange to renew their registrations. Fees are payable at the Office of the Bursar, University Hall.

Admission of extension students to Practical Arts classes with Credit IV will not be permitted after Saturday, October 2, for the Winter Session, and Saturday, February 12, for the Spring Session, unless for reasons of weight special permission for registration without credit is granted by the Director of the School of Practical Arts.

The University fee of \$6 per year is charged all extension students who register for Practical Arts courses marked e, but not to those who take only the popular lecture courses marked esp.

Unless special dates are mentioned in the following pages, all courses in Practical Arts are on the regular schedule of the School of Practical Arts, beginning Wednesday, September 22, 1920, for the Winter Session and Wednesday, February 2, 1921, for the Spring Session.

The attention of students is called to the fact that the numbering of courses and many details in the statement of the classes and hours in this section of the Announcement are different from those found on the preceding pages.

**A special supplementary circular concerning new extension courses and new sections in the School of Practical Arts will be issued in September, 1920.**



## PRACTICAL SCIENCE

Laboratory ticket: Students in all laboratory courses in the School of Practical Arts are required to purchase from the Bursar of Teachers College a laboratory breakage ticket, good for all science departments, price \$2. Unused coupons are redeemable at the end of any Session.

*Biology*

\* Certain courses in general biology, human biology, biological social hygiene, nature-study, and bacteriology, formerly announced in this Extension bulletin and now in the Announcement of the School of Practical Arts, are open to qualified extension students who obtain the written approval of the Director of that School.

*Chemistry*

**\*P. A. Chemistry e3L—Brief course for beginners in household arts.** Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Miss FRANCIS and Miss HONEYWELL

Section I—9-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session, Room 400 T. C.

Section III—9-11:50 a. m., Wednesday and Saturday, Winter Session

Section V-VI—7-9:50 p. m., Tuesday, Winter and Spring Sessions. (Register for e3a and e3b below.)

Limited sections. Lecture, Room 400 T. C. Laboratory, Room 402 T. C.

This briefer course, selected from Chemistry 1-2, is intended for students of fine arts, physical education, music, household administration, clothing, and other majors which do not require Chemistry 51 and Nutrition 71. Chemistry 3 prepares students for Chemistry 23, but not for Chemistry 31 and 41, for which the prerequisite is Chemistry 1-2, or 3 supplemented by 5.

**\*P. A. Chemistry e3a-3bL—Section V-VI of the above course.** 4 points for the year. Special fee \$20 each Session. Not charged at \$8 per point. Fifteen students required

7-9:50 p. m., Tuesday, Room 400 T. C.

This section is an adaptation of the above course intended especially for nurses or those who intend to study nursing and who wish a beginning course in chemistry.

**\*P. A. Chemistry e23L—Brief course in household and food chemistry.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Miss FRANCIS and assistant

Section I—2:10-5 p. m., Monday and Wednesday, Winter Session. Repeated as Section II—Spring Session

Limited sections

This brief course, preparatory to Nutrition 2, is intended for students of nursing, household administration, clothing, and hygiene who have not time for all the courses of the series, Chemistry 1-2, 31 or 41, 51, Nutrition 71, which are required in majors in cookery and nutrition. It will include selections from Chemistry 31, and cannot be credited in addition to 31 or as a substitute for that course.

Prerequisite: Chemistry 3 or equivalent.

\*A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted if there are vacancies after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.

**P. A. Chemistry e25—Food industries.** Lectures, readings, and excursions to manufacturing establishments and reports on the processes inspected. Credit IV. 3 points. Fee \$24. Professor VULTÉ and Miss VANDERBILT

Section I—10-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session

Section III—10-11:50 a. m., Monday and Friday, Winter Session. Repeated as Section IV—Spring Session. Room 400 T. C.

The lectures describe the preparation of the various staple foods, from the raw state to the finished product in marketable form and include a discussion of the composition and cost of the available materials. Among the various subjects considered are the cereals, flours, meals, starch, bread, sugars, meats, edible oils, dairy products, tea, coffee, chocolate, alcoholic beverages, spices, and condiments. The processes of drying, salting, smoking, canning, and preserving are described. Adulteration and substitution are also considered.

Preceding or parallel: A course in general chemistry.

**\* P. A. Chemistry e31L—Household chemistry and introduction to organic.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Professor VULTÉ, Miss VANDERBILT, and Mrs. MCGOWAN

Section III—2:10-5 p. m., Tuesday and Thursday, Winter Session. Repeated as Section IV—Spring Session

Limited sections. Room 405 Dodge

This course includes (a) laboratory study of composition, properties, and purification of water; effect of various cooking utensils on food products; economy of fuels; carbohydrates, testing of flour, meals, cereals, fruits, and similar products; fats, soap-making, soap powders, scouring agents, and polishes; proteins, examination of eggs, meat extracts, gelatine, milk, and cheese; baking powders; tea, coffee, and cocoa; (b) lectures, demonstrations, and recitations on important organic compounds of the aliphatic and aromatic series, such as hydrocarbons, alcohols, aldehydes, ketones, acids, esters, amines, amides, amino acids, purin bases, etc.

Prerequisite: General chemistry equivalent to Chemistry 1-2. Chemistry 3 does not admit to 31. Chemistry 25 is a desirable supplement to 31.

### *Hygiene*

**P. A. Hygiene e72—Personal and general hygiene.** Lectures, recitations, and required readings. Credit IV. 2 points. Fee \$16. Professor WILLIAMS  
11 a. m., Tuesday and Thursday, Winter Session

This course is intended for advanced students. It will consider the principles of hygiene, both personal and general, and their practical application to everyday life.

**P. A. Hygiene e75—Sanitary science.** Lectures and demonstrations. Credit IV. 2 points. Fee \$16. Professors WINSLOW and BROADHURST  
Lecture, 4:10-5:30 p. m., Monday, Winter Session  
Recitation, 5:10-5:40 p. m., Wednesday, Winter Session

This course includes a general survey of the fundamental principles of sanitary science and disease prevention and their application to water supply, milk, and general food supply, disposal of sewage and garbage, air supply, the problems of tenement and factory sanitation, and the spread and control of infectious diseases. Brief attention will also be given to the problems of rural hygiene, the preventive factors in constitutional disease, personal hygiene,

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.

and the social and economic aspects of health problems. The functions and methods of boards of health will be discussed and the use of vital and sanitary statistics.

Recommended preparatory or parallel course: Biology 57.

**P. A. Hygiene e76—Industrial hygiene.** Lectures and field work. Credit IV. 2 points. Fee \$16. Professor WINSLOW

4:10–5:30 p. m., Monday, Spring Session. Hours for field work, 3:10–6 p. m., on six Mondays during the Session

This course deals with the dangers to life and health in factories and workshops, and with the practical work of sanitary inspection as applied to industrial establishments. It will include a brief discussion of factory accidents, a consideration of industrial poisonings from lead, phosphorus, and other metals, and from the inhalation of noxious gases, and with the effect of factory dust and vitiated air upon health, and particularly upon the prevalence of tuberculosis. Emphasis will be laid upon possible preventive measures and the inspection work will furnish a basis for judging sanitary conditions.

Prerequisite: Hygiene 75.

### *Mathematics*

**P. A. Mathematics e31-32—Industrial mathematics.** Credit IV. 2 points each Session. Fee \$16 each Session. Mr. BRECKENRIDGE

11 a. m.–12:50 p. m., Saturday, Room 211 T. C.

This course is designed especially for teachers of mathematics or mechanic arts in technical or trade schools.

Prerequisite: College entrance mathematics or an equivalent experience in mechanic arts.

### *Practical Arts Physics*

**\* P. A. Physics e1L—General course in applied physics.** Lectures, excursions, and laboratory work. Credit IV. 4 points. Fee \$32. Mr. GOOD and assistants

Lecture, 11 a. m., Monday and Wednesday, Winter and Spring Sessions

Section V—3:10–5 p. m., Monday and Wednesday, Winter Session. Repeated as Section VI—Spring Session

Limited sections. Room 408 T. C.

A general course for beginners including a series of exercises in the study of practical appliances. It serves as an introduction to a study of the principles and operation of the mechanisms and phenomena of physical experience.

**P. A. Physics e31L—Household physics.** Lectures, excursions, and laboratory work. Credit IV. 2 points. Fee \$16. Mr. GOOD and assistants

Section I—9–11:50 a. m., Thursday, Winter Session

Section II—9–11:50 a. m., Friday, Spring Session

Limited sections. Room 408 T. C.

The purpose of this course is to teach how to use and care for the equipment of homes and institutions, with particular reference to mechanical, electrical and heating devices. It will show how modern appliances may be either nuisances or sources of comfort, according as one can or cannot make intelligent use of them. The course will deal with water supply, plumbing, sewers, heating, ventilation, refrigeration, gas supply, stoves, lamps, electric lighting, cooking and heating, telephone, elevators and dumbwaiters, machinery for dishwashing, laundry, and cleaning, fire extinguishers, and general repairs.

Prerequisite: Physics 1.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.



**Industrial Arts e57—Automobile mechanics.** 4 points. Mr. GOOD and assistants. For description, see Industrial Arts

## FINE ARTS

Most courses in Fine Arts are given in Rooms 426-435 Macy Building of Teachers College. A complete schedule of classes will be posted near the office (Room 431 Macy).

For all courses announced as "limited" students must reserve places at the time of registration, see p. 125. Any course or section with less than fifteen students may be discontinued and the fees returned after the first lesson.

### *Art Appreciation and History*

**Fine Arts e69-70—Art appreciation. History of art.** Lectures, reports, and required reading. Credit IV. 2 points each Session. Fee \$16 each Session. Professor Dow

4:10-5:30 p. m., Tuesday, Horace Mann Auditorium

Appreciative study of painting, sculpture, architecture, and design, in historical development. Lantern illustrations.

First part of course: nature of space arts, principles common to them all; art structure, composition of line and mass, color-theory, art criticism.

In the historical study, general chronological order is followed, but facts as to dates and periods are to be derived from the text-book, Reinach's *Apollo*. Reading is tested by written exercises.

In connection with museum and library studies, reports will be required upon some of the following subjects: The art of the American Indians, especially of those of the Southwest, Peruvian textiles and handicrafts, art of the Aztecs, Maya architecture and decoration, Egyptian painting and handicrafts, Coptic textiles, early Greek, Cypriote and Minoan design, Mohammedan design and craftwork, Gothic buildings, ancient and modern, Gothic sculpture, early Italian paintings, American and present-day arts. These reports may be illustrated with small photographs, tracings, or sketches.

### *Art Structure*

**Fine Arts e1L—Art structure A.** For teachers, designers, illustrators, craftsmen, and painters. Lectures and studio work. Credit IV. 3 points. Fee \$24. Professors DOW and CORNELL, Miss TANNAHILL, and Mr. HECKMAN

Section I—2:10-5 p. m., Monday and Wednesday, Winter Session

Section II—2:10-5 p. m., Monday and Wednesday, Spring Session

Section VII—7:10-10 p. m., Monday and Wednesday, Winter Session

Limited sections

The courses in art structure stand for (a) *freedom*—to use *line, mass, color*; (b) *power*—to appreciate fine qualities of proportion, arrangement, and color, and to obtain these qualities in creative art work.

Outline: 1. Principles of art—how lines, masses, colors may be put together to produce fine quality—spacing, rhythm, grouping. 2. Original design—choosing and combining lines, masses, colors. Exercises with brush and ink, charcoal, colored crayons, water-color. Position of body, breathing, control of hand, freedom of movement, power in execution. Study of masterpieces. 3. Use. Applications in painting, illustrating, designing, modeling, and handicraft.

This course offers appreciative experience of value to students in Education, Administration, Industrial and Household Arts, and other departments.

Reading: Dow's *Composition and Theory and Practice of Teaching Art*.



**Fine Arts e2L—Art structure B.** Continuation of Fine Arts 1. Lectures and studio work. Credit IV. 3 points. Fee \$24. Professor CORNELL, Miss TANNAHILL, and Mr. HECKMAN

Section I—2:10–5 p. m., Monday and Wednesday, Spring Session

Section III—9–11:50 a. m., Tuesday and Thursday, Winter Session

Section VIII—7:10–10 p. m., Monday and Wednesday, Spring Session

Limited sections

Principles of composition: line and dark-and-light harmonies in pattern, lettering, and landscape; how to study color; harmony of colors in design, pictures, costumes, printing, the home. Study of historic examples, primitive art, Japanese art. Special study, under guidance, of museum art collections.

Applications in decoration, illustration, painting, hand work, and occupations.

Reading as in Fine Arts 1.

Prerequisite: Fine Arts 1. Design or drawing in most other schools is so different that it cannot be accepted as equivalent of Fine Arts 1 or 2.

**Fine Arts e3L—Freehand drawing.** Credit IV. 2 points. Fee \$16. Professor MARTIN and Mr. HECKMAN

Section I—2:10–4 p. m., Tuesday and Thursday, Winter Session

Section III–IV—4:10–6 p. m., Wednesday, throughout the year. (Register for Fine Arts e3a and e3b below.)

Limited sections

Outline, relief, light and shade. Perspective. Drawing from still life, flowers, and casts; landscape sketching. Charcoal, brush, pencil. Copying of masters' drawings. Assigned reading.

**Fine Arts e3a-3bL—Section III–IV of above course.** 2 points for the year. Fee \$8 each Session

4:10–6 p. m., Wednesday

**Fine Arts e3X—Blackboard drawing.** 1 point. Fee \$8. Professor MARTIN  
4:10–6 p. m., Friday, October and November

**Fine Arts e49-50—Art structure Ca.** Lectures and studio work. Credit IV. 1½ points each Session. Fee \$12 each Session. Professor DOW and Miss TANNAHILL

9–11:50 a. m., Saturday. Three hours outside work per week

An abridged course in theory and principles of art. (See Fine Arts 1, 2, 51–52.) For teachers, designers, illustrators, craftsmen, and painters.

Exercises in composition. Brush drawing and painting; charcoal studies; color in theory and practice. Assigned reading and museum work.

**Fine Arts e75-76—Lettering and color printing.** Credit IV. 3 points each Session. Fee \$24 each Session. Miss TANNAHILL

2:10–5 p. m., Tuesday and Thursday

Lettering: Composition of lettered spaces. Styles of letters, type faces, beauty of form in letters, legibility. Writing with reed-pen, steel pen, brush, and stick. Designing of posters, cards, title-pages, page decorations, florets.

Printing: A limited number of accepted designs may be cut on linoleum and proofs printed on a hand-press.

Reading: Johnston's *Writing, Illuminating, and Lettering*; Goudy's *The Alphabet*; Dow's *Composition*.

Open only to those who have completed Fine Arts 1 and 2 and whose programs are approved by the instructor.

**Fine Arts e75x-76x—Poster design.** Lectures and studio work. 2 points each Session. Fee \$16 each Session. Professor DOW, Mr. HECKMAN, and special lecturers

2:10-5 p. m., Friday, and hours to be arranged

The poster: its purpose and use. Appeal and response. Designing of posters. Color schemes. Papers, inks, the printing press. Engraving on linoleum. Printing of simple designs. Printing with wood block alphabets and florets. Study of Japanese prints and poster collections. Special note: Making of posters for college use will be part of the *required* work of this class.

Reading: Price's *Poster Art*; Goudy's *The Alphabet*; Hollingworth's *Psychology of Advertising*; Dow's *Composition*.

Open only to those who have completed Fine Arts 1, 2, 3, 4, and 75. Design or drawing in other schools cannot be accepted as equivalent of Fine Arts 1 and 2.

**Fine Arts e25-26—Clay modeling and pottery.** 2 points each Session. Fee \$16 each Session. Mr. UPJOHN

Section I—3:10-5 p. m., Wednesday and Friday

Section II—2:10-4 p. m., Tuesday and Thursday

Section III—10-11:50 a. m., Tuesday and Thursday

Clay modeling: Modeled and incised tiles and panels. Mouldings and medallions in low and high relief. Sketching of small figures in clay. Modeled heads, from casts. Colored relief, casting in plaster. Mould-making: one-piece, chip-and-piece, and gelatine moulds.

Pottery: Making of shapes. Coiling, building, pressing, casting. Making of pottery moulds. Decoration with underglaze colors. Sprigging, biscuit-firing, glazing, and gloss firing.

Reading: Cox's *Pottery*; Binns' *Potter's Craft*; Jewitt's *History of Pottery*.

Prerequisite: Fine Arts 1, 2.

**Fine Arts e53-54L—Drawing and painting.** Credit IV. 2 points each Session. Fee \$16 each Session. Professor MARTIN

Section I—9-10:50 a. m., Tuesday and Thursday

Section II—2:10-4 p. m., Wednesday and Friday

Limited sections

Expression by line, modeling in line, shading, gradation, values, perspective, modeling in tone, technique of charcoal. Painting in oil and water-color, figures, animals, landscapes. Copying in museums.

Reading: Knowlton's *Hints on Sketching from Nature*; Ross' *Drawing and Painting*.

Prerequisite: Fine Arts 3 or equivalent.

**Fine Arts e53a-54a—Drawing and painting.** 1 point each Session. Fee \$8 each Session. Professor MARTIN

9-10:50 a. m., Saturday

Freehand drawing in charcoal and pencil from objects, cast, still life, and costumed figure. Shading, gradation, values, texture, and tone-modeling. Painting in oil and water-color.

Prerequisite: Fine Arts 3 or equivalent.

**Fine Arts e83-84—Painting.** Credit IV. 4 points each Session. Fee \$32 each Session. Professor BEMENT

9-11:50 a. m., Monday, Wednesday, and Friday

Drawing and painting from life, costumed model. Compositions of figures and landscapes for mural painting and illustration. Portrait and landscape painting. Copying in museums. Studio and outside work.

Reading: Vanderpoel's *The Human Figure*; Dr. Rimmer's *Anatomy*; Alfred East's *Landscape Painting*.

Prerequisite: Fine Arts 51-52, 53-54, or equivalents.

**Fine Arts e83a-84a—Painting.** 1½ points each Session. Fee \$12 each Session. Professor MARTIN

9-11:50 a. m., Saturday

Still-life painting, landscape painting, work from costumed model.

Advanced course following Fine Arts e49-50 and e53a-54a.

**Fine Arts e93-94—Life class for women.** Credit IV. 3 points each Session. Fee \$24 each Session. Professor BEMENT

9-11:50 a. m., Monday, Wednesday, and Friday

Open only to those who have satisfactorily completed Fine Arts 53-54.

Drawing and painting from living model. Two criticisms per week.

**Fine Arts e97-98—Figure construction.** Credit IV. 2 points each Session. Fee \$16 each Session. Professor BEMENT

2:10-5 p. m., Wednesday

A course in drawing and sketching the human figure, adapted to the requirements of students in costume design.

Reference books: Rimmer's *Anatomy*; Vanderpoel's *The Human Figure*; Poynter's *Drawings*.

#### *House Design*

**\* Fine Arts e14L—Home furnishing.** Lectures and studio work. Credit IV. 3 points. Fee \$24. Mrs. TREGANZA

Section I—9-11:50 a. m., Monday and Friday, Winter Session

Section II—9-11:50 a. m., Tuesday and Thursday, Spring Session

Limited sections

Studies in art structure and design in relation to the furnishing of the home. Good spacing and arrangement, leading lines, rhythmic lines, light-and-dark spaces, color combinations and schemes. Simple exercises with charcoal, brush, and crayon. Excursions to museums, studios, and shops.

Assigned reading.

**\* Fine Arts e80L—Home furnishing, advanced.** Lectures, readings, and reports. Credit IV. 3 points. Fee \$24. Mrs. TREGANZA

9-11:50 a. m., Monday and Friday, Spring Session

Limited class

Development of the house, artistic and practical. Each phase will be presented by an expert. The materials to be used will be studied in three ways: (a) contact, (b) observation, (c) illustrated lectures.

Prerequisite: Fine Arts 1, 2, 3, Drawing 3-4.

#### *Costume Design*

**\* Fine Arts e21L—Costume design.** Credit IV. 3 points. Fee \$24. Miss NORTHROP

Section I—2:10-5 p. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session

For Saturday section (V-VI) register for Fine Arts e21a and e21b below

Limited sections

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.

Study of line, dark and light, and color in relation to costume. Designing for various occasions. Pencil, water-color, and tempera.

Prerequisite: Fine Arts 1, 2, and 97.

**Fine Arts e21a-21bL**—Same as e21. 3 points for the year. Fee \$12 each Session. Miss NORTHRUP

9-11:50 a. m., Saturday, throughout the year

### *Art Industries*

**Fine Arts e31-32**—Design in the art industries. Lectures and studio work. Credit IV. 3 points each Session. Fee \$24 each Session. Professors Dow and MARTIN

9-11:50 a. m., Monday and Wednesday

Instruction in principles and practice of design. Training for professional designers and craftsmen. Drawing with brush and ink. Painting in fresco and water-color. Line design and space filling. Tone and masses. Color theory, color scheming. Original designs for metal, wall-paper, wood, pottery, textiles, and stained glass.

Reading: Dow's *Composition*; Day's *Ornament and Its Application and Pattern Designs*; Hicks' *The Craft of Handmade Rugs*; Hooper's *Handloom Weaving*.

Prerequisite: Fine Arts 1, 2.

**Metalworking e1**—Hammered metal. Credit IV. 2 points. Fee \$16

9-10:50 a. m., Tuesday and Thursday, Winter Session. Mr. HEINS

Instruction in hammered and raised work. Processes include forming of bowls, trays, boxes, candlesticks, furniture fittings, and other shapes, and their enrichment by repoussé; coloring of metals by patinas. Design is required in planning the projects.

Students should elect Fine Arts 1 parallel, and if possible Fine Arts 31-32.

**Metalworking e4**—Metalworking for Industrial Arts. 2 points

9-11:50 a. m., Saturday. Twenty students required. Mr. HEINS

**Metalworking e5-6**—Jewelry. Shopwork. Credit IV. 2 points each Session. Fee \$16 each Session Mr. HEINS

Section I—2:10-4 p. m., Monday and Wednesday

Section II—4:10-6 p. m., Monday and Wednesday

Each section requires fifteen students. Rooms 26 and 243 Macy

Instruction in making buckles, fobs, chains, necklaces, pendants, rings, setting of stones, casting of silver; polishing and finishing of metals; coloring by chemical and electrolytic methods. Design is required in planning projects. Part of the course has been simplified and rearranged for students in Occupation Therapy.

Prerequisite: Metalworking 1, 2; and a design course, which may be taken parallel.

### *Mechanical Drawing*

**Drawing e3-4**—Mechanical drawing, briefer course. 2 points each Session. Fee \$16 each Session. Mr. Cox

3:10-5 or 4:10-6 p. m., Monday and Wednesday, Winter and Spring Sessions

Intended for students in fine arts, house decoration, and others who do not wish to specialize in mechanical drawing.



**Drawing e31-32—Mechanical and freehand perspective drawing.** 2 points each Session. Fee \$16 each Session. Mr. Cox  
4:10-6 p. m., Tuesday and Thursday, Winter and Spring Sessions

Intended to meet the requirements of students in household furnishing or interior decoration, costume design, architecture, and those interested in perspective drawing in general. It consists of making drawings of simple objects, interiors of rooms, showing the location of doors, windows, furniture, rugs. Pencil and pen and ink rendering.

Other and more advanced courses in fine arts described in the *Announcement of the School of Practical Arts* may, with the approval of the Director of the School, be open to extension students whose general and technical preparation is satisfactory to Professor Dow.

## HOUSEHOLD ARTS

(See Cookery (below), Nutrition and Food Economics (p. 137), Textiles and Clothing (p. 138), Household Fine Arts (p. 132), Household Administration (p. 143).

### *Cookery*

Most courses in Foods and Cookery are given in Rooms 200-214 Grace Dodge Building of Teachers College. A complete schedule of courses will be posted near the office (Room 211 Dodge).

*Costume* for foods and cookery laboratories: Students are requested to wear white cotton clothing; plain skirt; tailored waist; plain white collar; no color in ties or bows of neckwear; long plain white apron with bib (for laboratory only); little, if any jewelry

*Limited sections:* For all 'limited' courses (indicated by L following the number, e. g., **Cookery e2L**) students must reserve places before completing registration. See p. 125

Any course or section with less than fifteen students may be discontinued and the fees returned after the first lesson

**Cookery e1—Technology of cookery and food economics.** Lectures and demonstrations. Credit IV. 2 points. Fee \$16. Professor VAN ARSDALE, Miss COLMAN, and Miss STONE

Section I—1:10-2 p. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

Section III—4:10-6 p. m., Friday, Winter Session. (For advanced students only.) Repeated as

Section IV—Spring Session.

The purpose of this course is to develop skill in the technique of cookery by means of a systematic introduction to the principles, processes, and food materials involved.

This course is prerequisite or parallel to all courses in cookery.

Students are advised to take general chemistry and physics parallel.

**Cookery e2L—Elements of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$30. Not charged at \$8 per point. Miss CONWAY and assistant

Section I—2:10-5 p. m., Monday and Wednesday, Winter Session. Repeated as Section II—Spring Session

Section III—9-11:50 a. m., Wednesday, and 2:10-5 p. m., Friday, Winter Session

#### Limited sections

This course is for students not majoring in foods and cookery, and for inexperienced housekeepers. It includes a general survey of the elementary principles of cookery, with an introduction to planning and serving meals in the home. Elementary chemistry, physics, and biology are desirable preliminary or parallel courses. This course does not satisfy the prerequisites for other courses of cookery, unless so stated in the announcement, nor may it be credited in addition to Cookery 3 or 41.

**\* Cookery e3L—Principles of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$30. Not charged at \$8 per point. Miss STONE and assistant

Section IX-X—Saturday, throughout the year. (Register for Cookery e3a and e3b below)

Section XI—7-9:50 p. m., Monday and Wednesday, Winter Session. Begins September 27

#### Limited sections

The purpose of this course is to give a working knowledge of the general principles of cookery. It deals with the selection, preparation and the methods of cooking the various types of food that are ordinarily served in the home and which are used in the teaching of elementary cookery. This course is fundamental for all teachers of cookery.

Preceding or parallel: General chemistry and Cookery 1.

**\* Cookery e3a-3bL—Section IX-X of above course.** Credit IV. 3 points for the year. Special fee \$15 each Session

9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 25

**\* Cookery e4L—Applied principles of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$30. Not charged at \$8 per point. Miss PEACOCK and Miss STONE

Section I—9-11:50 a. m., Monday and Friday, Winter Session

Section II—9-11:50 a. m., Tuesday and Thursday, Spring Session

#### Limited sections

The purpose of this course is the application of the principles of cookery to a wide range of food materials as a preparation for the more specialized type of work in the advanced courses to follow.

Prerequisite: Cookery 3.

Preceding or parallel: Cookery 1, Chemistry 1-2 or 3, and Physics 1.

**Cookery e40—Advanced cookery for housekeepers.** Lectures and laboratory work. No credit. Special fee \$20. Not charged at \$8 per point. Miss CONWAY

Section II—9-11:50 a. m., Friday, Spring Session. Begins February 11

Section IV—9-11:50 a. m., Monday, Spring Session. Begins February 14

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 and February 1. The instructor must be consulted before registration, and written permission obtained.

\* **Cookery e41L—Home cookery and table service.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$36. Not charged at \$8 per point. Miss CONWAY and assistant

Section V—VI—Saturday, throughout the year. (Register for Cookery e41a and e41b below)

Section VIII—7–9:50 p. m., Monday and Wednesday, Spring Session. Begins February 7

Limited sections

The purpose of this course is to give opportunity for practice in home cookery. It will include the study, planning, cooking and serving of breakfasts, luncheons, dinners, and suppers; also various methods of preparation and garnishing. It is intended for students who are planning to teach or to enter the field of household administration.

Prerequisite: Cookery 3 and Chemistry 1–2.

Preceding or parallel: Cookery 1, Chemistry 25, and Biology 4. Nutrition 1 is strongly recommended as a parallel. Administration 21 is also recommended.

**Cookery e41a-41bL—Section V–VI of above course.** 2 points each Session. Special fee \$18 each Session. Not charged at \$8 per point

9–11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 25

\* **Cookery e43L—Table service.** Lectures and laboratory work. 2 points. Fee \$16. Mrs. GUNN

Section I—9–11:50 a. m., Wednesday, Winter Session. Repeated as Section II—Spring Session

Section III—2:10–5 p. m., Friday, Winter Session. Repeated as Section IV—Spring Session

Limited sections

The purpose of this course is to give instruction in various forms of table service to those who have had advanced cookery or the equivalent to the home cookery in Cookery 41.

**Cookery e61—Lecture-demonstrations in cookery.** Credit IV. 4 points. Fee \$32. Miss SHAPLEIGH

Section I—9–11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session

This course is intended to acquaint the student with the more complicated processes of cookery, more elaborate utensils, and a greater variety of flavorings, seasonings, and food materials. Special emphasis will be laid upon a comparison of the dishes of different countries and the Americanization of foreign dishes.

Preceding or parallel: Cookery 1.

Prerequisite: Cookery 3 and 41 or equivalents.

**Cookery e71L—Elementary cookery for invalids.** Lectures, demonstrations, and laboratory work. 2 points. Special fee \$20. Not charged at \$8 per point. Miss PEACOCK

Section I—9–11:50 a. m., Wednesday, Winter Session

Limited class

This course is intended primarily for students of nursing and physical education who wish a brief course in the principles of cookery applicable to the care of the sick.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.

**\* Cookery e75L—Large quantity cookery.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Miss BOHN and Miss CONWAY

Section III—7-9:50 p. m., Monday and Wednesday, Winter Session. Begins September 27. Repeated as

Section IV—Spring Session. Begins February 7

Limited class

This course is designed to give practice in handling materials in large quantities for the large family or for small and large institutions, as hospitals, sanitariums, college dormitories, restaurants, etc. The course will include some practice in planning and serving of luncheons of varying costs to small groups as an introduction to larger work. The problem of minimum cost luncheons will be considered with reference to the demands of the cafeteria, the industrial plant, and the school.

Prerequisite: Cookery 3, 4, and 4I, or equivalents. Parallel: Courses in Administration and Nutrition.

**Cookery e90—History of cookery.** Credit IV. 2 points. Fee \$16. Miss SHAPLEIGH

Section I—2:10-4 p. m., Friday, Winter Session. Repeated as

Section II—Spring Session

This course is designed to show the historical development of the cookery of food materials as influenced by locality, climate, colonization, religion, etc., and the relation of literature to the subject of cookery.

Other and more advanced courses in cookery, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to extension students whose technical preparation is satisfactory to Professor VAN ARSDALE. Courses so opened to extension students will be charged at a special rate of \$10 per point

Special short courses in Cookery will be offered between September, 1920, and May, 1921. Circulars of information may be obtained from the Secretary of Teachers College in September, 1920, and February, 1921

### *Nutrition and Food Economics*

**\* Nutrition e1L—Elements of nutrition and dietetics.** Lectures, recitations, and laboratory work. Credit IV. 2 points. Fee \$16. Miss MACLEOD, Miss BARTO, and Professor SHERMAN

Section I—9-11:50 a. m., Saturday, Winter Session. Repeated as

Section II—Spring Session

Limited sections

This course describes very simply the essentials of an adequate diet, and the nutritive properties of common food materials. The application of such knowledge to the feeding of individuals and family groups is discussed, with special reference to limitations of cost. Estimations of food values and preparation and service of practical dietaries constitute the laboratory work.

Prerequisite: An elementary knowledge of cookery equivalent to Cookery 3. Students who have not previously studied chemistry are strongly advised to take Chemistry 1 or 3 in the Winter Session as preparation for this course in the Spring Session.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.



**Nutrition e2—Feeding the sick.** Lectures, recitations, and laboratory work. Credit IV. 2 points. Fee \$16. Professor ROSE and Miss BARTO  
Section I—2:10-5 p. m., Thursday, Winter Session. Room 401 Dodge

This course is designed to supplement Nutrition 1 for students without the scientific foundation for more advanced work. It includes a discussion of principles of general application in feeding the sick, methods of dietetic treatment for diseases of metabolism, laboratory practice in calculation and preparation of special diets.

Prerequisite: Nutrition 1 and Chemistry 23.

### *Textiles and Clothing*

Most courses in Textiles and Clothing are given in Rooms 301-311 Grace Dodge Building of Teachers College. A complete schedule of classes will be posted near the office (Room 309 Dodge)

*Limited sections:* For all courses announced as 'limited' students must reserve places at the time of registration. See p. 125. Any course or section with less than fifteen students may be discontinued and the fees returned after the first lesson

**Textiles e31a—Textiles.** Lectures. Credit IV. 2 points. Fee \$16. Professor FALES

Section I—10-10:50 a. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session

This course considers the primitive form of the textile industries in order to make clear their later development; the present methods of carding, spinning, and weaving; the modern manufacture and finishing of cotton, wool, silk, linen, and other important fibers, and their properties and values in relation to their manufacture. This course may be elected separately but is prerequisite to 31b and 31c below.

**Textiles e31b—Textile fabrics.** Lectures and laboratory work. Credit IV. 1 point supplementary to other textile work. Fee \$8. Professor FALES  
Section I—2:10-4 p. m., Wednesday, Winter Session. Repeated as Section II—Spring Session

This course concerns itself with the identification and grading of textile materials, their names, kinds, prices, and widths; considers variation of weave in regard to beauty and strength; the use and value of cotton, silk, wool, and linen for clothing and household furnishing.

Prerequisite: Textiles 31a.

**\* Textiles e31cL—Textile chemistry.** Laboratory work. Credit IV. 1 point supplementary to other textile or clothing work. Special fee \$10. Not charged at \$8 per point. Mrs. MCGOWAN

Section I—10-11:50 a. m., Wednesday, Winter Session. Repeated as Section II—Spring Session

Limited sections

This course considers (a) the identification of fibers and substitute material by means of the microscope; (b) the chemical examination of fibers including tests to determine content of cloth and adulteration, and proper use of materials in relation to cleansing and laundering; (c) lectures, and laboratory experiments in dyeing.

Prerequisite: Textiles 31a, Chemistry 3 or its equivalent.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.

**Textile manufacturing**—See under Industrial Arts, p. 145

**Clothing e33—History of costume.** Lectures. Credit IV. 2 points.

Fee \$16. Professor FALES

Section I—10-11:50 a. m., Wednesday, Winter Session. Repeated as

Section II—Spring Session

This course includes a survey of ancient Egyptian, Grecian, early and modern French costumes. It aims to give practical information for the use of students and teachers of dress-making, costume design, and fashion illustration.

**\* Clothing e5L—Elementary clothing and handwork.** For teachers.

Laboratory work. Credit IV. 4 points. Fee \$32. Miss WHITE and Miss EVANS

Section III—9-11:50 a. m., Tuesday and Thursday, Winter Session. Repeated as

Section IV—Spring Session

Section IX-X—Saturday, throughout the year. Begins September 25. (Register for e5a-5bL below)

Limited sections

This course includes practice in the following: use of the sewing machine and its attachments; making of fundamental stitches; use of commercial patterns; hand and machine sewing applied to undergarments and a simple wash dress; darning, patching, and simple embroidery.

Students provide required materials; estimated cost \$15, depending upon the quality of materials used.

This course, or its equivalent, is prerequisite to all dressmaking courses.

Preceding or parallel: Fine Arts I.

**Clothing e5a-5bL—Section IX-X of Clothing 5.** Credit IV. 4 points for the year. Fee \$16 each Session

9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 25

**\* Clothing e15L—Drafting and dress design.** For teachers. Laboratory work. Credit IV. 3 points. Fee \$24. Miss BALDT and Mrs. NELSON

Section III—2:10-5 p. m., Monday and Friday, Winter Session. Repeated as

Section IV—Spring Session

Section IX-X—Saturday, throughout the year. Begins September 25. (Register for e15a-15bL below)

Limited sections

This course gives practice in the making of patterns by drafting, modeling, and designing. Foundation patterns of a shirtwaist, shirtwaist sleeve, skirt, fitted waist and fitted sleeve are drafted to measure, cut in materials, and fitted. From these other patterns are designed and modeled in paper-muslin and cheesecloth. Good design is emphasized.

Students provide required materials; estimated cost \$15, depending upon the quality of materials used.

This course is prerequisite to all other dressmaking courses.

**Clothing e15a-15bL—Section IX-X of Clothing 15.** Credit IV. 3 points for the year. Fee \$12 each Session

9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 25

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.

\* **Clothing e35L—Dressmaking, elementary.** For teachers. Laboratory work. Credit IV. 3 points. Fee \$24. Miss BALDT

Section I—9-11:50 a. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

Section VII-VIII—Tuesday and Thursday evenings throughout the year. (Register for Clothing e35a-35b below.)

Section IX-X—Saturday, throughout the year. (Register for e35a and 35b below.)

**Limited sections**

This course includes the cutting and making of a middy-blouse, a tailored silk shirt, a wool skirt, and an afternoon silk dress. Commercial patterns as well as those made and fitted in Clothing 15 are used.

Students provide material; estimated cost \$35-\$50, depending upon the quality of materials used.

Prerequisite: Clothing 5, 15, Fine Arts 1.

**Clothing e35a-35bL—Special sections of Clothing 35.** Credit IV. 3 points for the year. Fee \$12 each Session

Section VII-VIII—7:30-9:20 p. m., Tuesday and Thursday, Winter and Spring Sessions. Begins October 23

Section IX-X—9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 25

**Clothing 35x—Tailoring demonstrations.** For teachers. Laboratory work. Credit IV. 1 point if taken in connection with Clothing 35 or 55. Fee \$8. Miss BALDT and Mr. NICOLosi

6:45-8:45 p. m., Tuesday and Thursday. Begins March 3

\* **Clothing e40a-40b—Children's clothing.** For teachers. Laboratory work. Credit IV. 3 points for the year. Fee \$12 each Session. Miss BALDT  
9-11:50 a. m., Saturday, throughout the year. Begins September 25

This course provides instruction in the cutting, fitting and making of clothing for children, both boys and girls, and for misses. Emphasis is laid upon good design, the choice of materials, the use of commercial patterns, and the construction of garments.

Prerequisite: Clothing 15 and 35 or equivalent.

**Clothing e41L—Dress design.** For teachers. Demonstrations, discussions, and lectures. Credit IV. 1 point supplementary to other textiles and clothing work. Fee \$8. Miss EVANS

Section I—12-12:50 p. m., Saturday, Winter Session. Begins September 25

This course includes demonstrations in draping blouses, skirts, and one-piece dresses.

\* **Clothing e45L—Dress design.** For teachers. Laboratory work. Credit IV. 3 points. Fee \$24. Miss EVANS

Section I—9-11:50 a. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.



Section IX-X—Saturday, throughout the year. Begins September 25. (Register for e45a and e45b below)

**Limited sections**

This course gives practical training in the application to costume of line, color harmony, dark and light, and texture. Historic costume is used as a source of inspiration for much of the work. Practice in using and adapting for different individuals and purposes designs from the current fashion magazines. All designing is done from patterns made in Clothing 15, and by modeling on the form to give practice in actual constructive design.

Students provide required materials; estimated cost \$15-\$18, depending upon the quality of materials used.

Prerequisite: Clothing 5, 15, 33, 35, and Fine Arts 1.

**Clothing e45a-45bL**—Section IX-X of Clothing 45. Credit IV. 3 points for the year. Fee \$12 each Session

9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 25

**Clothing e65—Embroidery.** For teachers. Laboratory work. Credit IV. 3 points. Fee \$24. Miss WHITE

2:10-5 p. m., Monday and Friday, Spring Session

This course includes practice in various kinds of embroidery—French embroidery for underwear, lingerie waists, and household linen; dress embroideries in white and colors and various specialized embroideries.

Students provide certain materials subject to the approval of the instructor. Estimated cost \$10, depending upon the quality of materials used.

**\*Clothing e27L—Millinery, elementary.** For teachers. Laboratory work. Credit IV. 3 points. Fee \$24. Mrs. TOBEY and Mrs. SMITH

Section III—9-11:50 a. m., Monday and Friday, Winter Session. Repeated as Section IV—Spring Session

Section VII-VIII—Tuesday and Thursday evenings throughout the year. (Register for Clothing e27a-27b below.)

Section IX-X—Saturday, throughout the year. (Register for Clothing e27a-27b below.)

**Limited sections**

This course includes practice in the making and covering of frames and in the preparation of trimmings, such as wiring bows, shirrings, puffings, milliners' folds. Students provide material subject to the approval of the instructor.

**Clothing e27a-27b**—Special sections of Clothing 27 above. Credit IV. 3 points for the year. Fee \$12 each Session

Section VII-VIII—7:30-9:30 p. m., Tuesday and Thursday, Winter and Spring Sessions. Begins October 19

Section IX-X—9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins September 25

**\*Clothing e55L—Dressmaking, intermediate.** For teachers. Laboratory work. Credit IV. 3 points. Fee \$24

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.



Section V—2:10-5 p. m., Tuesday and Thursday, Winter Session. Repeated as Section VI—Spring Session

Section IX-X—Saturday, throughout the year. Begins September 25. (Register for e55a-55b below)

**Limited sections**

This course includes the cutting and making of cloth garments from commercial and drafted patterns.

Students provide materials subject to the approval of the instructor.

Prerequisite: Clothing 5, 15, 35.

**Clothing e55a-55b**—Section IX-X of Clothing 55. Credit IV. 3 points for the year. Fee \$12 each Session

9-11:50 a. m., Saturday, Winter and Spring Session. Begins September 25

**Household Arts e36—Methods of teaching sewing in elementary schools.** 1 point. Fee \$8

12-12:50 p. m., Saturday, Spring Session

This course will include discussion of the elementary school course of study, lesson plans, use of illustrative materials, and methods of presentation of subject-matter in sewing, textiles, and allied subjects.

**Textiles e1—Textile economics and design.** For teachers. Lecture work. Miss EVANS

Section II—12-12:50 p. m., Saturday. Begins February 5. Credit IV. 1 point supplementary to other textile or clothing work. Fee \$8

**Textiles e85—Weaving.** Credit IV. 2 points. Special fee \$20. Not charged at \$8 per point

9 a. m.-12:50 p. m., Saturday. Begins February 5

*Courses for Home Workers*

**Clothing e1L—Sewing, elementary.** Laboratory work. Fifteen three-hour lessons. No credit. Fee \$20. Miss EVANS

9-11:50 a. m., Wednesday, Winter Session. Begins October 6

**Limited sections**

This course includes practice in hand and machine sewing and in the cutting, fitting, and making of undergarments. Students provide required materials.

**Clothing e31L—Dressmaking.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$20. Miss EVANS

Section I—10-11:50 a. m., Monday and Friday, Winter Session. Begins October 4. Repeated as

Section II—Spring Session. Begins February 7

Section III—2:10-4 p. m., Monday and Friday, Winter Session. Begins October 6. Repeated as

Section IV—Spring Session. Begins February 4

**Limited sections**

This course includes the cutting, fitting, and making from patterns of shirtwaists and unlined dresses in cotton, silk, and wool. Students provide materials; estimated cost \$10-\$35, depending upon the quality of materials used.

**Clothing e71L—Dressmaking, advanced.** Fifteen three-hour lessons. No credit. Fee \$20. Miss EVANS

Section II—9-11:50 a. m., Wednesday, Spring Session. Begins February 9  
Limited class

Students provide required materials; estimated cost \$25-\$50, depending upon the quality of materials used.

**Clothing e7L—Millinery, elementary.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$20. Mrs. NELSON and Mrs. SMITH

Section I—10-11:50 a. m., Tuesday and Thursday, Winter Session. Begins October 5. Repeated as

Section II—Spring Session. Begins February 8

Section III—2:10-4 p. m., Tuesday and Thursday, Winter Session. Begins October 5. Repeated as

Section IV—Spring Session. Begins February 8

This course includes the making of frames in wire and willow; the covering of hats in silk, velvet, lace, and straw; and demonstrations in trimming. Students provide materials.

**Clothing e17L—Millinery, advanced.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$20. Mrs. NELSON

Section II—2:10-4 p. m., Tuesday and Thursday. Begins February 8

Prerequisite: Clothing e7.

Other and more advanced courses in clothing, described in the *Announcement of the School of Practical Arts*, may, with the written approval of the Director of the School, be open to non-matriculated students whose technical preparation is equal to that of regular students.

#### *Household Administration and Economics*

**Administration eA—Principles of household administration.** Lectures. 1 point each Session. Fee \$8 each Session. Professor GUNTHER and Miss FISHER

Section I—1:10 p. m., Wednesday, Winter and Spring Sessions

This course is a general survey of the field of household administration, giving the background of activities in the household, and the meaning of homemaking at the present day. The specialized field in household administration will be considered.

**\*Administration e1L—Housewifery and household management.** Discussions, observation, and practical work. Credit IV. 2 points. Fee \$16. Miss BALDERSTON and assistant

Section I—9-10:50 a. m., Monday and Friday, Winter Session. Repeated as  
Section II—Spring Session

Section III—2:10-4 p. m., Monday and Wednesday, Winter Session. Repeated as

Section IV—Spring Session. Room 53 Dodge

Limited sections

This course treats of the kinds of work needed in various parts of the household and the systematic planning of the daily routine in care of rooms and their equipment. Special topics.

\*A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.

are: tools and materials; labor-saving appliances; care, cleaning, and repair; household efficiency; schedules of work; household service.

**Administration e11L—Domestic laundering.** Discussions, demonstrations, and laboratory work. Credit IV. 2 points. Fee \$16. Miss BALDERSTON and assistant

Section I—9-11:50 a. m., Tuesday, Winter Session. Repeated as

Section II—Spring Session

Limited sections. Rooms 53 and 57 Dodge

The course presents the principles and processes included in laundry work; space, equipment, and materials required for work in the home; machinery for domestic work, its cost, care, and uses; the processes of laundering; care of fine work, embroidery, laces; system in the domestic laundry; the household and the commercial laundry.

Recommended preparatory: Chemistry 3, Administration 1.

\* **Administration e21L—Buying.** Credit IV. 2 points. Fee \$16. Miss FISHER and Miss BALDERSTON

Section III—10-11:50 a. m., Wednesday, Winter Session. Repeated as

Section IV—Spring Session

Limited sections

This course deals with the problems of purchasing household and food supplies. This course presents the ethics of purchasing and the principles of buying food, household appliances and furnishings.

**Household Economics e79—Household economic science.** Credit IV. 2 points. Fee \$16. Professor ANDREWS

Section I—4:10-5 p. m., Monday and Wednesday, Winter Session. Repeated as Section II—Spring Session

Deals with the organization and control of family and personal life through the economic relations of the household. The family income and its expenditure; the budget system; necessities for efficient living; house ownership *versus* rental; house maintenance, furnishings, and equipment; operating expenses; cost of food and clothing; personal expenditure; thrift; methods of saving, as savings banks, investments, and insurance.

**Economic Science 81—Principles of accounts and household accounts.** Credit IV. 2 points Winter Session. Fee \$16. Professor ANDREWS  
3:10-4 p. m., Tuesday and Thursday

The general principles of accounting as an introduction to household arts, institution and business account keeping.

Other and more advanced courses in administration and economics, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose general and technical preparation is satisfactory to Professors GUNTHER and ANDREWS

Special short courses in Household Administration and Economic Science will be offered between September, 1920, and May, 1921. Circulars of information may be obtained from the Secretary of Teachers College in September, 1920, and February, 1921.

\* A limited number of non-matriculated or extension students whose preparation is equal to that of regular students in this course may be admitted, if there are vacancies, after 5 p. m. on September 21 or February 1. The instructor must be consulted before registration, and written permission obtained.



## INDUSTRIAL ARTS

**Art Industries**—For courses in hammered metal, silversmithing, jewelry, and color printing, see under Fine Arts

**Industrial Arts e57—Automobile mechanics.** Lectures and laboratory work. Credit IV. 4 points. Fee \$32. Mr. Good and assistants

Section I—3:10–6 p. m., Tuesday and Thursday, Winter Session. Repeated as Section II, Spring Session. Room 408 T. C.

A series of mechanical and electrical problems dealing with the construction, operation, adjustment, and care of the automobile. The work will include assembling the parts of the mechanism and taking them apart; locating and correcting troubles in connection with a study of the essential principles of gas-engines, carbureters, ignition systems, starting and lighting systems, cooling systems, clutches, gears, the differential, care of tires, lubrication, and fuels. This course does not include driving lessons on the road.

For students of vocational education this course will illustrate the use of the automobile for instruction in high schools and industrial schools.

The lecture-demonstration (3:10–4) may be taken without the laboratory work by students who are permitted by the instructor to register for Industrial Arts e57a, 2 points. This course may not be substituted for any required course in physics.

**P. A. Mathematics e31-32—Industrial mathematics.** Credit IV. 2 points each Session. Fee \$16 each Session. Mr. BRECKENRIDGE

11 a. m.—12:50 p. m., Saturday

**Textile Industries.**—The following courses of twelve double lessons each will be given on certain evenings 8–10 p. m., beginning in October, 1920: (a) woollens, (b) silks, ribbons, and pile fabrics, (c) cottons and cotton mixtures. Special circulars may be obtained in September from the office of the Secretary of Teachers College.

Other courses in industrial arts, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to mature extension students whose technical preparation is satisfactory to the instructor.

## MUSIC AND SPEECH

*General Art of Music*

**P. A. Music e21-22—Epochs in the development of music.** Lectures with musical illustrations and recitals. 2 points each Session. Fee \$16 each Session. Professor FARNSWORTH and Miss WIETHAN

4:10–5:30 p. m., Thursday, Room 502 Horace Mann School

A survey of the history of music with reference to those events that affect our present musical interests giving (a) material and method for the teaching of history and appreciation of music in schools; (b) opportunity for an acquaintance with the art that shall serve as a basis for greater musical enjoyment.

**P. A. Music e41-42—Musical literature.** Credit IV. 2 points each Session. Fee \$16 each Session. Professor FARNSWORTH and Miss WIETHAN

3:10–4 p. m., Tuesday and Thursday, Room 502 Horace Mann School

The aim of this course is to aid in forming a standard of taste in music by utilizing the unusual musical opportunities that the city affords. The work consists of musical illustrations, with discussions and practice in reporting.



**P. A. Music e25-26—Sight singing.** Credit IV. 2 points each Session. Fee \$16 each Session. Mr. KRAFT

4:10-5 p. m., Monday, Wednesday and Friday, Room 118 T. C.

This course develops speed in determining what the notation means and skill in its vocal production. The aim of the work is to provide the general student with the fundamental work necessary for all forms of musical activity and to serve as an introductory course to professional students who are unable to do the work required in Music 13-14—Tone thinking.

**P. A. Music e13-14—Tone thinking.** Music dictation and reading, including harmonic and melodic material. Credit IV. 2 points each Session. Fee \$16 each Session. Mr. KRAFT

3:10-4 p. m., Monday, Wednesday, and Friday, Room 118 T. C.

This course is basic for all singers, players, and music teachers. It gives practice in describing, in writing and orally, what is heard in music, and includes singing at sight.

Prerequisite: Either Music 25-26 or the ability to write from hearing a simple phrase of music.

**P. A. Music e33-34—Introductory harmony.** Credit I, IV. 2 points each Session. Fee \$16 each Session. Mr. KRAFT

2:10-3 p. m., Monday, Wednesday, and Friday, Room 118 T. C.

The aim of this course is: first, to lead the student to observe the structure of hymn-tunes, chorals, and simple compositions, with reference to the melodic movement of parts and to the character and distribution of chords; second, to give practice in melodic invention and chord combinations expressed in simple constructive work. This work can be adapted to high schools.

### *Technical Music Courses*

**P. A. Music e15-16—Voice: first year.** Individual work in groups limited to four. Credit IV. 2 points each Session. Special fee for Sections II and III \$40 for each Session. Not charged at \$8 per point

Section II—Room 605 Dodge. Miss DASCHBACH

Section III—Room 706 Dodge. Mr. JOLLIFFE

Hours to be arranged

**P. A. Music e35-36, e55-56, e75-76—Advanced courses in voice.** Hours to be arranged. Given in groups; under same conditions as to credit, hours, and fees as for the same instructors in Music e15-16. Consult Professor FARNSWORTH

**P. A. Music e27-28—Piano: first year.** Credit IV. 2 points each Session. Requires at least six hours' practice a week. Special fee \$40 for each Session. Not charged at \$8 per point. Mrs. COWL

(a) Individual work in groups limited to four. Once a week

The work presents the technique of playing, sight-reading, accompanying and drill in methods for concentration and practice, requiring, as a result, the ability to play at least a dozen selections from memory.

(b) Class lessons combining all groups. Once a week, Room 118 T. C.

4:10-5 p. m., Tuesday, and other hours to be arranged with the instructor

The work includes ear training, interpretation, with examples by both students and instructor. Analyses and estimates are made of a large number of selections.

**P. A. Music e37-38, e57-58, e67-68—Advanced courses in piano.** Hours to be arranged. Given in groups; under same conditions as to credit, hours, and fees as in Music e27-28. Consult Professor FARNSWORTH

**Piano practice**—Fee for use of pianos by extension students registered in Teachers College for eight or more points in a Session is \$10 per Session for six hours or less per week. Arrange hours at the office of Practical Arts (Room 107 Teachers College) on September 30

**P. A. Music e19-20—Organ.** Credit IV. 2 points each Session. Special fee \$50 for each Session. Not charged at \$8 per point. Mr. KRAFT

Individual work. Hours to be arranged. Consult instructor

Manuals, pedals, technical studies, 'Bach's Eight Short Preludes and Fugues. Albrecht-berger's Trios.

Prerequisite: Elementary piano-playing.

**P. A. Music e39-40—Violin.** Credit IV. 2 points each Session. Special fee \$50 for each Session. Not charged at \$8 per point. Mr. STOWELL

Hours to be arranged. Room 603 Dodge. Individual work

The work in this course includes a good position for scales in all keys, bowing, exercises, studies, solos, and special work for the development of good tone, together with ensemble and sight-reading classes.

Other courses in music for teachers, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose general and technical preparation is satisfactory to Professor FARNSWORTH

### *Speech*

**Speech e1—Voice and diction, introductory.** Lectures, class exercises, and individual practice. Credit IV. 2 points. Fee \$16. Professor LATHAM and assistant

9-10:50 a. m., Saturday, Winter Session

A practical course in the development and use of the speaking voice and in the technique of speech.

**Speech e2—Oral composition and public speaking, introductory.** Individual practice with criticisms and assignments. 2 points. Professor LATHAM and assistant

9-10:50 a. m., Saturday, Spring Session

The subjects assigned will be drawn usually from the student's other courses to avoid too heavy demands in preparation of subject-matter.

**Speech e3—Story-telling, introductory.** Class exercises, individual practice and story hours. 2 points each Session. Fee \$16 each Session

Section I—4:10-5 p. m., Wednesday and Friday, Winter Session

**Speech e51-52—Dramatic reading and speaking.** Lectures, practice, criticism, and recitals. Credit IV. 2 points each Session. Fee \$16 each Session. Professor LATHAM and assistant

10 a. m., Tuesday and Thursday

This course is open to students who have had Speech I-2 and 3-4, or similar courses.

In the first half of the course, the principles of vocal expression are studied; practice in reading plays is required; opportunity is given for taking part in the Teachers College Festival. In the second half of the course, scenes are acted in the class, and opportunity is given for program recitals of chosen types of literature and of original compositions.

**Speech e57—Speech correction.** Credit IV. 2 points. Fee \$16. Mrs. SCRIPTURE

II a. m.—12:50 p. m., Saturday, Winter Session. Repeated in Spring Session if fifteen students apply before February 1

This is primarily a course for teachers who must undertake the correction of speech defects in schools. The defects to be studied will include stuttering, lisping, cluttering, and negligent articulation. There will be lectures upon the causes of these defects and upon the theories advanced by prominent authorities concerning them. The study required will be upon the anatomy of the vocal organs, phonetics, diagnosis of speech defects, tongue and mouth gymnastics, and corrective exercises.

**Speech e81-82—Dramatization—Festivals, Plays, and Play Production.** Practical work. Credit IV. 2 points each Session. Fee \$16 each Session. Professor LATHAM and others

II a. m.—12:50 p. m., Saturday, Winter and Spring Sessions

This course is given to meet the rapidly increasing demand for guidance in the selection and use of material for original dramatic exercises in schools and social centers. Simple plays will be made and acted. The work of the class will be done in small groups interested in similar problems, and the special aims of individual students will be considered as far as that can be done without slighting attention to basic principles of dramatic expression.

## NURSING AND HEALTH

**Nursing e3—Physical care of infants and small children.** Lectures, demonstrations, and readings. Credit IV. 2 points. Fee \$16. Dr. KENYON and assistants

Section I—3:10–5 p. m., Monday, Winter Session. Repeated as

Section II—Spring Session

Presents the theory and practice of the care of infants and small children in a series of lectures and demonstrations. The following topics will be treated: the basis in physiological knowledge for the rational care of the child, the physical care of the infant and child, presenting in turn such topics as the daily régime of the infant, food, sleep, bathing, clothing; the child, from the third to the sixth year, nursery, clothing, food.

Preceding or parallel: A course in elementary physiology.

**Nursing e5L—Home nursing.** Lectures, demonstrations, and laboratory practice. Credit IV. 2 points. Fee \$16. Miss ROBSON

Lecture: 2:10 p. m., Tuesday, Winter and Spring Sessions

Demonstration and practice:

Section I—2:10–4 p. m., Thursday, Winter Session. Repeated as

Section II—Spring Session

Limited sections

This course deals with the prevention and care of illness in the home. It discusses such topics as proper surroundings for the sick, the early recognition of the common symptoms of disease, food for the sick, prevention and care of common ailments, such as colds, sore throats, etc., care of sick children and the aged, including simple nursing procedures and first-aid treatment for common household emergencies.

Prerequisite: Biology 4 or an equivalent course in physiology.

Other and more advanced courses in nursing and health, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to non-matriculated students whose technical preparation is satisfactory to Professor NUTTING



## PHYSICAL EDUCATION

The following extension courses are given in the Thompson Building of Teachers College, October 1, 1920, to May 15, 1921. First half-year (Winter Session) begins September 22. Second half-year (Spring Session) begins February 2

Lockers are available for women only. A deposit of twenty-five cents must be made for each locker key. This must be redeemed and gymnasium suits removed before June 6

The swimming-pool is reserved for women and children

Gymnasium shoes must be soft-soled and without heels

Information concerning gymnasium and swimming suits may be obtained from the Secretary of the Department of Physical Education

**Special lessons for women and children**—A number of special series of lessons in gymnastics, folk and natural dancing, swimming, and corrective gymnastics will be given from September, 1920, to May, 1921, in the Thompson Building of Teachers College by the School of Practical Arts in cooperation with the University Institute of Arts and Sciences. A special circular may be obtained in September from the Secretary of Teachers College

**Physical Training eA1-A2**—For women. 1 point each Session. Fee \$8 each Session. Miss YUNCK and assistants

Section IV—2:10 p. m., Monday and Wednesday. Folk dancing

**Physical Training eB1-B2**—For women. 1 point each Session. Fee \$8 each Session. Miss YUNCK and assistants

Section I—2:10 p. m., Tuesday and Thursday. Folk dancing

Section III—4:10 p. m., Monday and Wednesday. General gymnastics

Section IV—4:10 p. m., Tuesday and Thursday. Athletics

**Physical Training eC1-C2**—For women. 1 point each Session. Fee \$8 each Session. Miss YUNCK and assistants

Section V—4:10 p. m., Tuesday and Thursday, Room 255 Thompson

Section VI—5:10 p. m., Monday and Wednesday, Room 255 Thompson

Section VIII—Outdoor athletics and hikes. Hours for groups to be arranged, especially on Saturdays or other days

Sections V and VI are arranged with reference to the needs of mature students who wish the simpler forms of exercise. These include gymnastic exercises, games, swimming, and elementary dancing. The outdoor work of Section VIII will be under the direction of group leaders who will emphasize the principles of outdoor exercise for health.

**Physical Training eD1-D2**—For women. 1 point each Session. Fee \$8 each Session. Miss YUNCK and assistants

Section VII—3:10 p. m., Monday and Wednesday, Room 255 Thompson

Section VII is arranged to give practice in dancing to advanced students who have already had training equivalent to that in courses A, B, C.

**Physical Education e54**—Games, folk dancing, and corrective gymnastics. Credit IV. 2 points. Fee \$16

10 a. m., Monday, Wednesday, and Friday, Spring Session

This condensed course is designed for school nurses and others who are interested in helping to introduce simple and wholesome forms of recreation into schools and communities. Cer-



tain physical defects common among school children will also be discussed and corrective exercises demonstrated. The work will include theory and practice in dramatic games, games of skill, simple folk dancing, and corrective gymnastics.

**Physical Education e54A—Recreation work in social centers.** Credit IV. 1 point. Fee \$8. Miss COLBY and assistant  
11 a. m., Monday, Spring Session

This condensed course is planned for social and religious workers who expect to direct recreation activities in social centers. It will consist of one hour of lecture and two of practical work. The lecture will take up the theory of selection of suitable material and discussion of methods of handling various groups.

**Physical Education e77-78—The dramatic game.** Theory and practice. Credit IV. 1 point each Session. Fee \$8 each Session. Miss COLBY  
5:10 p. m., Tuesday and Thursday, Room 253 Thompson

This course takes up fundamental play rhythms and music; interpretation through characterization and development of plot; the study of dramatic and singing games, showing their historical and racial significance; the development of simple folk dances from singing games; trade dances; Indian dances; pantomimes and ceremonies. The aim is to show the relation of this material to the psychological development of the child.

The course includes assigned reading, note-books, and original constructive work. The material is suitable for use in the first six grades.

**Physical Education e83-84—Educational hygiene.** Lectures, collateral reading, demonstration, and reports. Credit IV. 2 points each Session. Fee \$16 each Session. Professor WOOD  
2:10 p. m., Monday and Wednesday, Room 164 Thompson

Physical Education 83 deals with various phases of school hygiene. Physical Education 84 takes up health education with special reference to the needs and work of teachers. For full description, see Announcement of School of Practical Arts, § 104.

**Physical Education e85-86—Play and playgrounds, and community centers.** Lectures, required reading, and observation. Credit IV. 2 points each Session. Fee \$16 each Session. Mr. GIBNEY  
5:10 p. m., Tuesday and Thursday, Room 164 Thompson

This course is intended for men and women who are preparing for work in recreation systems and playgrounds. It aims to enrich the content of playground and community center work, to encourage the formation of standards, to develop a capacity for leadership, and to equip students for professional careers in the field covered.

**Physical Education e87-88—Hygiene of childhood and adolescence.** Lectures, reference reading, discussions, and reports. Credit IV. 2 points each Session. Fee \$16 each Session. Professor WOOD  
11 a. m., Saturday, lecture; 12 m., Saturday, conference; Room 164 Thompson

Physical Education 87 deals with the following topics: the principle of projected consciousness as applied in the nurture and education of children; brief review of organic evolution, heredity and prenatal influence; consideration of eugenics; application of biologic principles in care of infancy and childhood; relation of physical welfare to other values in the life of the child.

Physical Education 88 deals with the following topics: significance and value of the lengthened period of immaturity in the human species; adolescent development with normal and abnormal characteristics; sex development with the direct and indirect influences upon the individual at various stages of growth; mental and emotional hygiene; education of the instincts and emotions; education for parenthood involving sex-hygiene and sex-education, with other factors.

**Physical Education e97-98—Clubcraft.** Credit IV. 1 point each Session.  
Fee \$8 each Session. Mr. C. F. SMITH

11 a. m., Monday

This course is intended to give the practical training required by club leaders and supervisors. A study of the principles, aims, and programs of the better established club movements and organizations will be made. Actual practical work will be done and opportunity provided for observation and study of Horace Mann clubs.

**Hygiene**—For courses in hygiene related to physical education, see p. 127

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Other courses in physical education, with numbers below 100, described in the *Announcement of the School of Practical Arts*, may be made available for specially qualified non-matriculated students, who bring to the Director of the School of Practical Arts the written approval of Professor WOOD or WILLIAMS

## ACADEMIC CALENDAR

1920-1921

1920

(For full academic calendar, apply to the Secretary of Columbia University)

- July 6—Tuesday. Twenty-first Summer Session begins.  
Aug. 13—Friday. Twenty-first Summer Session ends.  
Sept. 13—Monday. Entrance and deficiency examinations begin.  
Sept. 15—Wednesday. Registration for the Winter Session in Extension Teaching (including the payment of fees) begins.  
Sept. 22—Wednesday. Winter Session, 167th year of Columbia University, begins.  
Sept. 23—Thursday. Classes in Extension Teaching begin.  
Nov. 2—Tuesday. Election Day, holiday.  
Nov. 23—Tuesday. Annual Thanksgiving Service in St. Paul's Chapel.  
Nov. 25—Thursday  
to  
Nov. 27—Saturday, inclusive, Thanksgiving holidays.  
Dec. 12—Sunday. Annual Commemoration Service in St. Paul's Chapel.  
Dec. 22—Wednesday  
to

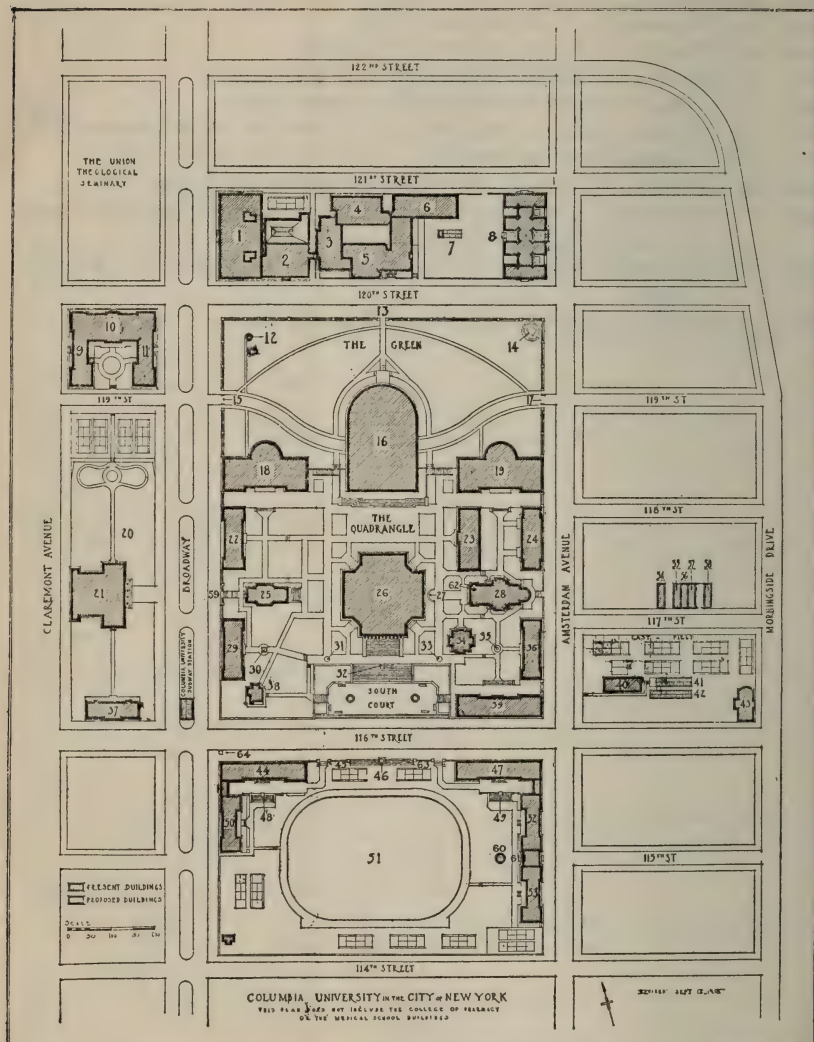
1921

- Jan. 4—Tuesday, inclusive, Christmas holidays.  
Jan. 13—Thursday. Mid-year entrance examinations begin.  
Jan. 19—Wednesday. Mid-Year Examinations begin.  
Jan. 24—Monday  
to  
Jan. 29—Saturday, inclusive, mid-year examinations in Extension Teaching.  
Jan. 27—Thursday. Registration for the Spring Session in Extension Teaching (including the payment of fees) begins.  
Feb. 1—Tuesday. Winter Session ends.  
Feb. 2—Wednesday. Spring Session begins. University Service in St. Paul's Chapel. Classes in Extension Teaching begin.  
Feb. 12—Saturday. Alumni Day.  
Feb. 22—Tuesday. Washington's Birthday, holiday.  
Mar. 24—Thursday  
to  
Mar. 28—Monday, inclusive, Easter holidays.  
Apr. 15—Friday. Last day for filing applications for the professional certificate in secretarial studies and in the evening courses in business.  
May 23—Monday  
to  
May 28—Saturday, inclusive, final examinations in Extension Teaching.  
May 29—Sunday. Baccalaureate Service.

- May 30—Monday. Memorial Day, holiday. Class Day.
- June 1—Wednesday. Commencement Day.
- June 20—Monday. Entrance examinations begins.
- July 5—Tuesday. Twenty-second Summer Session begins.
- Aug. 12—Friday. Twenty-second Summer Session ends.
- Sept. 5—Monday. Last day for filing applications for entrance examinations and for advanced standing.
- Sept. 19—Monday. Entrance and deficiency examinations begin.
- Sept. 21—Wednesday. Registration for the Winter Session in Extension Teaching (including the payment of fees) begins.
- Sept. 28—Wednesday. Winter Session, 168th year of Columbia University, begins.
- Sept. 29—Thursday. Classes in Extension Teaching begin.



# INFORMATION IN REGARD TO THE BUILDINGS AND GROUNDS OF COLUMBIA UNIVERSITY



## Teachers College

1. Horace Mann School
2. Thompson Memorial Bldg.
3. Milbank Memorial Chapel
4. Macy
5. Main Building
6. Household Arts
7. Peabody Greenhouse
8. Whittier
- Barnard College
9. Fiske
10. Milbank
11. Brinckerhoff
20. Milbank Quadrangle
21. Students' Hall
37. Brooks Hall
- Columbia University
12. Wilde Observatory
13. Class of 1882 Gates
14. Statue of the great God Pan
15. Mapes Gates
16. University
17. Class of 1888 Gate

18. Havemeyer
19. Schermerhorn
22. Engineering
23. Avery
24. Fayerweather
25. Earl
26. Library
27. Class of 1886 Exedra
28. St. Paul's Chapel
29. Mines
30. Meunier's Hammerman, 1889 Mines Class Gift
31. Lafayette Post Flag Staff
32. Statue of Alma Mater
33. Class of 1881 Flag Staff
34. East
35. Class of 1887 Well Head
36. Philosophy
38. Faculty Club
39. Kent
40. Crocker Research
41. Botany Greenhouse
42. Agriculture Greenhouse

43. President's House
44. Journalism
45. Classes of 1884 and 1899 Tablet
46. Class of 1885 Sun Dial
47. Hamilton
48. Jefferson Statue
49. Hamilton Statue
50. Furnald
51. South Field
52. Hartley
53. Livingston
54. Columbia House
55. Dean Hawkes
56. Chaplain Knox
57. Maison Française
58. Carnegie Endowment
59. Class of 1891 Gates
60. Van Amringe Memorial
61. 1906 Clock
62. Class of 1893 Chapel Bell
63. Rives Memorial Steps
64. Class of 1890 Pylon





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4/22

Twenty-first Series, No. 25

May 21, 1921



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# Columbia University 1922

## Bulletin of Information

### UNIVERSITY EXTENSION ANNOUNCEMENT

AFTERNOON, EVENING AND SATURDAY CLASSES  
MORNINGSIDE HEIGHTS

1921-1922

PUBLISHED BY  
Columbia University  
in the City of New York  
MORNINGSIDE HEIGHTS  
NEW YORK CITY



# **Columbia University Bulletin of Information**

Twenty-first Series, No. 25

May 21, 1921

Issued at Columbia University, Morningside Heights, New York, N. Y., thirty-seven times during the academic year, weekly between December and August. Entered as second-class matter August 10, 1918, at the post-office at New York, N. Y., under the Act of August 24, 1912. Acceptance for mailing at a special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized. These include:

1. Annual Reports of the President and Treasurer to the Trustees.
2. The Catalogue of the University, price 25 cents, and the Announcements of the several Colleges, and Schools, and of certain Divisions, issued in the spring, relating to the work of the next year. These are made as accurate as possible, but the right is reserved to make changes in detail as circumstances require. The current number of any of these Announcements will be sent without charge upon application to the Secretary of the University.

C. N. P. 60,000-1921

**The office of University Extension is Room 301 University Hall  
For office hours, see page 4**

**A special circular will be issued  
for courses added after June 1**



# Columbia University Bulletin of Information

## UNIVERSITY EXTENSION ANNOUNCEMENT

AFTERNOON, EVENING AND SATURDAY CLASSES  
MORNINGSIDE HEIGHTS

1921-1922

PUBLISHED BY  
Columbia University  
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NEW YORK CITY



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*Lecturer in Greek and Latin  
Associate Adviser to Women Students*



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LEILA E. AIKEN, A.B. . . . .	<i>Spanish</i>
GEORGE M. ALLEN, B.Arch. . . . .	<i>Instructor in Architecture</i>
IVAN S. ANDREEVSKI . . . . .	<i>Russian</i>
BENJAMIN R. ANDREWS, PH.D. . . . .	<i>Assistant Professor of Household Arts</i>
FREDERICK S. ANDREWS . . . . .	<i>Instructor in Music</i>
OSCAR W. ANTHONY . . . . .	<i>Mathematics</i>
HÓLMFRÍÐUR ÁRNADÓTTIR . . . . .	<i>Danish-Norwegian</i>
ALEXANDER M. ARNETT, A.M. . . . .	<i>Instructor in History</i>
RAMIRO ARRATIA, A.M. . . . .	<i>Spanish</i>
WILLIAM EDMUND AUGHINBAUGH, LL.M., M.D. . . . .	<i>History</i>
EARL B. BABCOCK, PH.D. . . . .	<i>French</i>

Professor of Romance Languages, New York University

A. CHARLES BABENROTH . . . . .	<i>English</i>
MATTHEW G. BACH, A.M. . . . .	<i>Instructor in German</i>
PIERRE DE BACOURT, B.S., B.L. . . . .	<i>Assistant Professor of French</i>
K. LANNEAU BAKER, B.C.S., C.P.A. . . . .	<i>Accounting</i>
LYDIA RAY BALDERSTON, A.M. . . . .	<i>Instructor in Household Arts</i>
LAURA IRENE BALDT, A.M. . . . .	<i>Instructor in Household Arts</i>
CHARLES S. BALDWIN, PH.D. . . . .	<i>Professor of Rhetoric and English Composition</i>
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MARY I. BARBER, B.S. . . . .	<i>Instructor in Household Arts</i>
JEAN B. BECK, PH.D. . . . .	<i>Anthropology</i>

Professor, Bryn Mawr

HAGGOTT BECKHART, A.M. . . . .	<i>Lecturer in Banking</i>
HERMON F. BELL, C.P.A. . . . .	<i>Accounting</i>
GOTTLIEB A. BETZ, PH.D. . . . .	<i>Instructor in German</i>
RALPH T. BICKELL, B.S. . . . .	<i>Instructor in Accounting</i>
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CLEMENT S. BRAININ, PH.D. . . . .	<i>Astronomy</i>
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WILLIAM EDWIN BRECKENRIDGE, A.M. . . . .	<i>Associate in Education</i>
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HEYWOOD BROWN . . . . .	<i>English</i>
THEODORE H. BROWN, PH.D. . . . .	<i>Assistant Professor of Foreign Trade</i>
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FRANK CALLCOTT, A.M. . . . .	<i>Spanish</i>
WILFRID H. CALLCOTT, A.M. . . . .	<i>History</i>
MARGARET C. CAMMACK . . . . .	<i>Instructor in Chemistry</i>
HARRY J. CARMAN, PH.D. . . . .	<i>Assistant Professor of History</i>
STELLA STEWART CENTER, A.M. . . . .	<i>Secretarial Correspondence</i>
ROBERT E. CHADDOCK, PH.D. . . . .	<i>Associate Professor of Statistics</i>
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American Museum of Natural History	
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JOHN T. HORNER, A.B.	Instructor in Accounting
BASSETT W. HOUGH	Music
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URSULA K. JOHNSTONE	Filing
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CLINTON W. KEYES, PH.D.	Instructor in Greek and Latin
SAMUEL J. KIEHL, PH.D.	Assistant Professor of Chemistry

S. BERNARD KOOPMAN, M.S. . . . .	Accounting
ISRAEL KORAL, A.B. . . . .	Assistant in Physics
A. B. KOUKOL . . . . .	Czecho-Slovak
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CHARLES I. LAMBERT, M.D. . . . .	Psychology

Assistant Superintendent, Bloomingdale Hospital

VICTOR K. LA MER, A.B. . . . .	Research Assistant in Food Chemistry
KENNETH W. LAMSON, PH.D. . . . .	Instructor in Mathematics
GUSTAV E. LANDT, B.S. . . . .	Assistant in Chemistry
WILLIAM PAUL LANGREICH . . . . .	Advertising Display
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MINOR W. LATHAM, A.M. . . . .	Instructor in English
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WILLIAM W. LAWRENCE . . . . .	Professor of English
ALMA DE L. LE DUC, PH.D. . . . .	Instructor in French
EDWARD M. LEHNERTS, A.M. . . . .	Lecturer in Geography

Assistant Professor, Hunter College

H. W. LEYENBERGER, A.B. . . . .	Stenography and Typewriting
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HASTINGS LYON, LL.B. . . . .	Assistant Professor of Finance
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CLARICE VALLETTE MCCAULEY . . . . .	English
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ELLEN BEERS MCGOWAN, B.S. . . . .	Instructor in Household Arts
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JAMES O. MCKINSEY, A.M., C.P.A. . . . .	Lecturer in Accounting

Assistant Professor, Chicago

VIRGIL S. MALLORY, A.B. . . . .	Mathematics
CLARENCE A. MANNING, PH.D. . . . .	Lecturer in Slavonic Languages
HENRI GABRIEL MARCEAU . . . . .	Architecture
CHARLES J. MARTIN, B.S. . . . .	Assistant Professor of Fine Arts

CHARLES L. MARVIN, B.C.S.	<i>Accounting</i>
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WILLIAM P. MONTAGUE, PH.D.	<i>Professor of Philosophy</i>
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O. S. MORGAN, PH.D.	<i>Professor of Agriculture</i>
WILLIAM E. MORGAN, A.B.	<i>Instructor in Chemistry</i>
JACQUE CYRUS MORRELL, A.M.	<i>Assistant in Chemistry</i>
LEIGHTON B. MORSE, PH.D.	<i>Physics</i>

Assistant Professor, College of the City of New York

WILLIAM E. MOSHER, PH.D.	<i>Government</i>
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GLEN H. MULLIN	<i>English</i>
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THOMAS MUNRO, PH.D.	<i>Lecturer in Philosophy</i>
GARDENER MURPHY, A.M.	<i>Psychology</i>
S. BUTLER MURRAY, JR., PH.D.	<i>Lecturer in Roman Archaeology</i>
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CHRISTINE WARNER NELSON	<i>Instructor in Household Arts</i>
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MARTIN A. NORDGAARD, A.M.	<i>Mathematics</i>

Professor, Grinnell

JOHN A. NORTHCOTT, A.M.	<i>Associate in Mathematics</i>
-------------------------	---------------------------------

Professor, Syracuse

BELLE NORTHRUP, B.S.	<i>Instructor in Fine Arts</i>
TORIBIO ESQUIVEL OBREGON, LL.D.	<i>Commercial Law</i>
GEORGE C. D. ODELL, PH.D.	<i>Professor of English</i>
BRUNO OETTEKING, PH.D.	<i>Anthropology</i>

Department of Physical Anthropology, Museum of the American Indian, Heye Foundation

HENRI C. OLINGER, A.M.	<i>French</i>
------------------------	---------------

Assistant Professor, New York University

RAYMOND E. O'NEILL	<i>Business Art</i>
FEDERICO DE ONÍS, L. en D.	<i>Professor of Spanish Literature</i>
JOHN E. ORCHARD, A.M.	<i>Instructor in Economic Geography</i>
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MARY HENLEY PEACOCK, Ph.B. . . . .	<i>Instructor in Household Arts</i>
ORMAN C. PERKINS, M.D. . . . .	<i>Neurology</i>

Assistant Professor of Anatomy, Long Island College Hospital

JOSEPH LOUIS PERRIER, Ph.D. . . . .	<i>French</i>
HARLOW S. PERSON, Ph.D. . . . .	<i>Lecturer in Business Organization</i>
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ERWIN W. ROESSLER, Ph.D. . . . .	<i>Lecturer in German</i>

Chairman, Department of Modern Languages, New York High School of Commerce

ROWLAND ROGERS . . . . .	<i>Motion Picture Production</i>
MARY SWARTZ ROSE, Ph.D. . . . .	<i>Associate Professor of Household Arts</i>
JOSHUA ROSETT, M.D. . . . .	<i>Instructor in Neurology</i>
DONALD ROSS, B. S. . . . .	<i>Accounting</i>
FRANK A. ROSS, A.M. . . . .	<i>Instructor in Sociology</i>
ALBIN RUSSMAN . . . . .	<i>Accounting</i>

EDWARD J. RYAN, A.B. . . . .	<i>Stenography and Typewriting</i>
DOROTHY SCARBOROUGH, Ph.D. . . . .	<i>Lecturer in English</i>
OTTO P. SCHINNERER, A.M. . . . .	<i>Lecturer in German</i>
FREDERICK WILLIAM SCHOLZ, A.M. . . . .	<i>Accounting</i>
HENRY H. L. SCHULZE, A.M. . . . .	<i>Assistant Professor of Germanic Languages and Literatures</i>
ROBERT L. SCHUYLER, Ph.D. . . . .	<i>Associate Professor of History</i>
RUTH J. SCOTT . . . . .	<i>Assistant in Household Arts</i>
AMY IRENE SHAW . . . . .	<i>Assistant in English</i>
WILLIAM SHAW-THOMSON . . . . .	<i>Advertising</i>
LAMBERT A. SHEARS, A.M. . . . .	<i>German</i>
HERBERT N. SHENTON, A.M. . . . .	<i>Instructor in Sociology</i>
HENRY CLAPP SHERMAN, Ph.D. . . . .	<i>Professor of Food Chemistry</i>
WALTER I. SLICHTER, E.E. . . . .	<i>Professor of Electrical Engineering</i>
ADA J. SMITH . . . . .	<i>Instructor in Household Arts</i>
CHARLES F. SMITH, B.S. . . . .	<i>Instructor in Scouting</i>
MA SOO, A.M. . . . .	<i>Chinese</i>
HARRY M. SPANDAU, M.S. . . . .	<i>Business Mathematics</i>
A. GUY H. SPIERS, Ph.D. . . . .	<i>Associate Professor of French</i>
ALLAN P. SPRINGER, A.M. . . . .	<i>French</i>
CAROLINE E. STACKPOLE, A.M. . . . .	<i>Instructor in Biology</i>
MILIVOY S. STANOYEVICH, A.M., M.L. . . . .	<i>Jugoslav</i>
EDGAR W. STANTON . . . . .	<i>Accounting</i>
GASTON MCF. STEPHENS, B.S. . . . .	<i>Assistant in Business Organization and Administration</i>
ARCHIBALD H. STOCKDER, A.M. . . . .	<i>Instructor in Business Organization</i>
CHARLES LEONARD STONE . . . . .	<i>Psychology</i>
Instructor, Dartmouth	
CORNELIA H. STONE, A.B. . . . .	<i>Instructor in Household Arts</i>
EDGAR S. STOWELL . . . . .	<i>Instructor in Music</i>
DUANE R. STUART, Ph.D. . . . .	<i>Latin</i>
Professor, Princeton	
ETSU INAGAKI SUGIMOTO . . . . .	<i>Japanese</i>
HARVEY JULIAN SWANN, Ph.D. . . . .	<i>French</i>
JOHN A. SWENSON, A.B. . . . .	<i>Mathematics</i>
JOHN B. SWINNEY, A.B. . . . .	<i>Retail Merchandizing</i>
A. DEV. TASSIN, A.M. . . . .	<i>Assistant Professor of English</i>
RUPERT TAYLOR, Ph.D. . . . .	<i>Lecturer in English</i>
T. CLINTON TAYLOR, Ph.D., Chem.E. . . . .	<i>Lecturer in Chemistry</i>
FRANKLIN THOMAS . . . . .	<i>Sociology</i>
Superintendent of New York Orphanage, Hastings-on-Hudson, New York	
ASHLEY H. THORNDIKE, Ph.D. . . . .	<i>Professor of English</i>
WILLIAM TILLY . . . . .	<i>Phonetics</i>
FREDERICK W. TILNEY, M.D. . . . .	<i>Professor of Neurology and Neuro-Anatomy</i>
EVELYN SMITH TOBEY, B.S. . . . .	<i>Instructor in Household Arts</i>
HERBERT J. TOLHURST . . . . .	<i>Cable Telegraphy</i>

HARRIET TOWNSEND . . . . .	<i>Lecturer in Social Science</i>
RUTH ROBINSON TREGANZA, B.S. . . . .	<i>Instructor in Fine Arts</i>
WILLIAM P. TRENT, D.C.L. . . . .	<i>Professor of English Literature</i>
J. C. TRESSLER, A.M. . . . .	<i>English</i>

Head of the English Department, Newtown High School, New York City

CHARLES H. TUTT, A.B. . . . .	<i>French</i>
LEVERING TYSON, A.M. . . . .	<i>Home Study</i>

Assistant to the Director

BENJAMIN B. UNDERHILL . . . . .	<i>Textiles</i>
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New York Agent of K. M. Gilmore & Company and Middlesex Bleach, Dye and Print Works

CHARLES BABCOCK UPJOHN . . . . .	<i>Instructor in Fine Arts</i>
JOSEPH ANTHONY VAETH, PH.D. . . . .	<i>Spanish</i>
RENÉ VAILLANT, LL.M. . . . .	<i>French</i>
MAY B. VAN ARSDALE, B.S. . . . .	<i>Associate Professor of Household Arts</i>
SADIE B. VANDERBILT, B.S. . . . .	<i>Instructor in Household Arts</i>
LA RUE VAN HOOK, PH.D. . . . .	<i>Professor of Greek and Latin</i>
THURMAN W. VAN METRE, PH.D. . . . .	<i>Associate Professor of Transportation</i>
FELICIU N. VEXLER, A.M. . . . .	<i>Assistant in Slavonic Languages</i>
HERMANN T. VULTÉ, PH.D. . . . .	<i>Assistant Professor of Household Arts</i>
GEORGE H. WALDEN, JR. . . . .	<i>Instructor in Chemistry</i>
HAROLD V. WALSH, B.Arch. . . . .	<i>Instructor in Architecture</i>
JAMES SKILLMAN WARD, A.M. . . . .	<i>German</i>

Professor of Modern Languages, John Carleton Agricultural College, Stephenville, Texas

PETER T. WARD, A.B., LL.B. . . . .	<i>Business English</i>
ALBERT L. WECHSLER, A.M. . . . .	<i>Mathematics</i>
GERALD WEEMAN . . . . .	<i>Instructor in Physical Education</i>
H. P. WHITLOCK . . . . .	<i>Mineralogy</i>

Curator in Mineralogy, American Museum of Natural History

MAY JOSEPHINE WIETHAN, A.C.M. . . . .	<i>Lecturer in Music</i>
LAWRENCE A. WILKINS, A.M. . . . .	<i>Spanish</i>
BLANCHE COLTON WILLIAMS, PH.D. . . . .	<i>English</i>

Professor, Hunter College

DAVID McK. WILLIAMS, F.A.G.O. . . . .	<i>Music</i>
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Organist, St. Bartholomew's Church, New York

JESSE FEIRING WILLIAMS, M.D. . . . .	<i>Associate Professor of Physical Education</i>
ROBERT H. WILLIAMS, A.B. . . . .	<i>Spanish</i>
CHARLES-EDWARD A. WINSLOW, A.M. . . . .	<i>Lecturer in Public Health</i>
SAMUEL LEE WOLFF, PH.D. . . . .	<i>Lecturer in English</i>
ROBERT S. WOODWORTH, PH.D. . . . .	<i>Professor of Psychology</i>
THOMAS L. WOOLHOUSE, C.P.A. . . . .	<i>Accounting</i>
ERNEST H. WRIGHT, PH.D. . . . .	<i>Associate Professor of English</i>
JAMES J. WRIGHT . . . . .	<i>Stenography and Typewriting</i>
CLARENCE H. YOUNG, PH.D. . . . .	<i>Professor of Greek Archaeology</i>
BERNADINE MEYER YUNCK . . . . .	<i>Instructor in Physical Education</i>



## INTRODUCTORY

# The University opens Wednesday, September 28, 1921, and classes begin Thursday, September 29, in the Winter Session. The Spring Session will open February 8, 1922, and classes will begin on that date. #

The Statutes of the University (Section 250) define University Extension as "instruction given by University officers and under the administrative supervision and control of the University, either away from the University buildings, or at the University, for the benefit of students not able to attend the regular courses of instruction."

**Students.** Courses in University Extension are planned for two classes of students: *first*, men and women who can give only a portion of their time to study and who desire to pursue subjects included in a liberal education of the character and grade of a college or professional school, but without any reference to an academic degree; *second*, those who look forward to qualifying themselves to obtain in the future academic recognition, involving acceptance of the work which they may satisfactorily complete in University Extension.

**Courses of Instruction.** Regular courses of instruction are offered in University Extension which in many instances are coordinated so as to form the first years of collegiate and professional work, thus providing in the evening, at Morningside Heights and elsewhere, courses in subjects which are generally offered in the freshman, sophomore, and junior years of college, so that students may qualify themselves for admission with advanced standing to Columbia or other institutions, as candidates for the degrees of Bachelor of Arts and Bachelor of Science.

Courses in University Extension may, for students who obtain the approval of the Committee of the Council on University Undergraduates, lead to the B.S. degree in general studies.

Under the direction of the University Council courses are offered in University Extension which count toward the degrees of Master of Arts and Doctor of Philosophy.

There are also offered at Morningside Heights in the evening, subjects which are required of students for entrance to the Schools of Mines, Engineering, and Chemistry, so that a student may pursue some special line of scientific study or prepare himself for advanced study in these Schools. Classes in these Schools are open only to those who have had a preliminary course of three years in Columbia College or the equivalent. This preliminary collegiate training may be taken in part or in full in University Extension in the evening by students engaged in business during the day. See pp. 10-12.

Evening courses are offered in architecture which correspond to courses of the Columbia University School of Architecture and lead to a certificate.

Evening classes in business, open as individual courses or forming a four year series leading to a certificate and preparing for the State examination for the certificate of Certified Public Accountant, are given at Morningside Heights. A special circular describing these courses in detail will be mailed upon request. See also p. 8.



A series of courses intended to equip students for the position of private secretary is also offered. These courses are described in a special circular which will be mailed on application. See also pp. 13, 14.

Many courses are offered which aid a student to prepare for the Schools of Business, Dentistry, Law, and Medicine, or to complete his preparation for Columbia College. See pp. 9, 10.

A two year course in practical optics is offered in cooperation with the Department of Physics for the special training of those who desire to become optometrists. A special circular will be mailed upon request.

Courses are offered in agriculture for those who desire special work in that subject. See pp. 20-24.

Courses covering the first two years of collegiate study and supplying the pre-professional years of the Long Island College Hospital are given at that institution. See special circular.

Numerous classes are given at various centers. These are either regular courses of collegiate grade, or short lecture courses without academic credit.

Centers for the study of choral music are maintained at Morningside Heights and Brooklyn, and choral concerts are given during the year.

The Department of University Extension maintains also the Institute of Arts and Sciences, described on p. 14.

A series of Home Study Courses has been instituted by the Department of University Extension. Full particulars will be given upon application. See also pp. 14-16.

Under University Extension are offered also a number of classes in dentistry. These include graduate courses for practitioners, intended for graduates of approved dental institutions, and classes in oral hygiene for licensed dental hygienists, designed to train women for the practice of operative dental hygiene. They are offered at the College of Physicians and Surgeons and the Vanderbilt Clinic, Fifty-ninth Street and Tenth Avenue.

A large number of other courses in varied subjects are given late in the afternoon and on Saturday, which repeat those in liberal studies offered in the Schools of the University. These are given in the same manner and often by the same instructors as the regular courses. In most instances credit may be granted by the various schools of the University.

### **Registration and Payment of Fees**

All classes are open to both men and women. Students are permitted to attend any class once before registering.

Each student is required to complete his registration in accordance with the following procedure:

He should go to the office of the Registrar in person and there file a registration blank, giving a statement of the courses he is authorized to pursue and such other information as may be necessary for record; and he is required to pay his fees to the Bursar.

Office of the Registrar, Room 315 University Hall (East Corridor).

Office of the Bursar, Room 310 University Hall (West Corridor).

✱ Registration and payment of fees begin:

Winter Session—Wednesday, September 21, 1921.

Spring Session—Thursday, February 2, 1922.

The offices of the Registrar and Bursar will be open daily 9 a. m. to 5 p. m., except Saturday (9 a. m. to 12 m.).

The office of the Registrar will be open in the evening, except Saturday, throughout the academic year, 7 to 9 p. m.

The office of the Bursar will be open in the evening, except Saturday, during the registration period, 7 to 9 p. m.

*A student in the Winter Session* desiring to continue studies in the Spring Session will be given an opportunity to renew his registration and pay fees before February 8 when classes begin. Definite instructions will be mailed to students before the close of the Winter Session.

*Students working for credit* in University Extension should complete their registration by the opening of the Winter or Spring Session. Late registrations may for reasons of weight be accepted up to the second Saturday of either Session, but students entering late do so upon their own responsibility. Students may register after those dates, but without credit. Absences will be counted against the student from the first day of the Session.

*Change of Program.* When students report at the office of the Registrar not later than the second Saturday of the Winter or Spring Session that they have discontinued any or all courses for which they were duly registered, the tuition fees are returned; when they report after that date no rebate or credit is allowed. In the case of students registering for the first time after the first Saturday of the Session, one week from the date of registration is allowed for such adjustments. Occasional exceptions to this rule may be made in cases where it is clearly wise for a student to change from one course to another; such changes must be for sound educational reasons and must be approved by the educational advisers to students in University Extension.

*Withdrawal.* After October 8 or February 18 respectively, students who are obliged to withdraw entirely from the University because of serious personal illness, and *only such*, may be allowed a partial rebate of their tuition fees. In considering such applications, the student will ordinarily be charged ten per cent. of the total tuition fee for each week following the second Saturday of the Session up to the date his written notice of withdrawal is received by the Registrar. The University fee is not subject to rebate.

*Fees.* University fee. For students in University Extension exclusively, for each year or any part thereof, \$6.

*Tuition fees.* The fee for each course is stated in the description of the same.

The University statutes provide that fees are payable in full in advance. Checks should be drawn to the order of Columbia University and presented in person or forwarded by mail to the office of the Bursar. Under the regulations, the privileges of the University are available only to those who have completed their registration.

The fees to be paid by the students are subject to change at any time at the discretion of the Trustees.

**General Information**

**Admission.** The classes in University Extension are planned first for mature students, whose chief interest lies outside the University, and who have leisure to pursue only a few courses in the late afternoon or at night. For such students no entrance examinations are required. The sole condition is that these students show that they are qualified to pursue the work with profit. All courses are open to both men and women.

Students, however, who desire to take complete programs in University Extension and are giving their attention to study at the University alone, are subject to the following definite restrictions:

1. They must be at least eighteen years of age.
2. Except for reasons of weight, students under twenty-four years of age will be required to possess a full high school education in order to be qualified for admission to all except preparatory courses. Credentials should be submitted at least two weeks before registration. Blanks for this purpose will be sent on application.
3. They are required to elect approved programs aggregating as many points as is judged wise by the advisers. The minimum program is usually fifteen points. In arranging their programs, students will be expected to select correlated subjects leading to some definite end. All students under twenty-four years of age must have their programs approved in the office of University Extension before registration. These students must attend their classes regularly and maintain passing grades in their subjects.
4. Students who come from other universities or colleges without diplomas or certificates must submit complete records of preparatory and college work, with statements certifying to their honorable dismissal. These records should be presented at least two weeks before the opening of the Session.
5. No changes of program will be permitted beyond the second Saturday after the opening of each Session, except by special permission of the Advisers.

With students who intend to begin or resume regular attendance under any faculty of the University, the question of academic credit for University Extension courses should in every case be considered and approved by the designated representative of the Committee on University Admissions. Proper blanks may be obtained in the office of University Extension.

The admission and continuance upon the rolls are subject to the full disciplinary power of the University authorities as prescribed by the statutes of the University.

A matriculated student is expected to conform to the rules for registration of the college or school of which he is a member. Students who expect later to apply for credit must secure approval of their schedules before registration. Record of attendance will date for matriculated students from September 29, 1921, and February 8, 1922.

Matriculated students in the various schools of the University will be allowed to attend courses in University Extension in accordance with the regulations of the several schools.

**Office.** The office of University Extension is Room 301 University Hall. Full information as to this Department may be obtained at this office, which is open from 9 a. m. to 5 p. m., daily, Saturday, 9 a. m. to 2 p. m. The office will



be open every evening, except Saturday, from 7:30 to 9:30 from September 21 to October 7, 1921, and from February 2 to February 17, 1922; also every Tuesday and Thursday evening from 7:30 to 9, throughout the Winter and Spring Sessions. When this office is not open, students are referred to the office of the Registrar, Room 315 University Hall.

**Privileges.** Students taking six points each Session have the privileges of the Library and, in the case of men, of the University Gymnasium. Under certain conditions, depending upon the amount of work taken, women students in University Extension may reside in Fernald Hall; men students in Tompkins and Morris Halls. (See Residence Halls, below.)

Attention is called to the restaurant service at the University Commons, maintained for the use of students, where a dining-room for men and women is located.

A social room for women students is located on the first floor of Philosophy Hall at the left of the entrance to the building. This room is open during the day and evening for the use of women students and their guests. A rest room for women students in University Extension in 709 Journalism Building is open in the morning and afternoon. A coat room in the basement of Journalism is provided for the use of students.

**Residence Halls.** Concerning the University residences for men, Tompkins and Morris Halls, full information may be obtained by applying to the Superintendent of Buildings and Grounds. The privilege of residence in these dormitories is limited, in University Extension, to men pursuing programs aggregating not less than twelve points each Session. These students must be in good standing and consistently maintain passing grades in all subjects.

### *Tompkins and Morris*

The University has recently acquired for use as residence halls two modern apartment houses, Tompkins and Morris, situated on Claremont Avenue near 116th Street, and overlooking the buildings and campus of Columbia University and Barnard College.

The buildings are eleven stories high and of attractive plan. They are lighted by electricity, heated by steam, and have telephone and electric elevator service.

Approximately two hundred rooms (in Tompkins and Morris) suitably equipped with beds, chiffoniers, mirrors, chairs, blankets, sheets, pillow cases and towels, will be available for men in the Winter Session of 1921. The arrangements permit a flexibility of assignment as single rooms, double rooms, and rooms in suites. There are adequate bathroom accommodations in each apartment, and many of the bedrooms have hot and cold running water. The buildings will be operated under the same general policy and under the same administrative rules as govern Hartley and Livingston Halls.

The rates for each person per week will be given on request. They include heat, light, and service, and a supply of bed linen and towels with the washing of the same. The prices are governed by the size, the exposure, the location, and the elevation of the rooms, and by the number of occupants in each room.

For detailed information in regard to the location and rates, apply to the Superintendent of Buildings and Grounds, Room 110, Library Building, Columbia University.



*Furnald Hall*

This University dormitory will be assigned to the use of women students in the academic year 1921-1922. The privilege of residence is limited in University Extension to women in good standing, pursuing programs approved by the Director, aggregating not less than fourteen points of work each Session of collegiate or professional grades, and consistently maintaining passing grades in all subjects. All of these students must have completed a full secondary education in an approved high school. Detailed information in regard to rooms and rates in Furnald Hall may be obtained by applying to the office of the Superintendent of Buildings and Grounds.

*Residence Outside the Halls*

Detailed information and advice concerning desirable rooms and boarding places for both men and women may be obtained at the Residence Bureau, Room 305 Philosophy Hall.

All women students under twenty-four years of age who are not living at home are required to live in a dormitory, or to obtain permission to do otherwise from the Advisers of Women in University Extension. Such students will not be allowed to complete their registration until their proposed living arrangements have been approved by these officers, whose signatures must be obtained. In general, younger women students are not expected to take rooms in places where no reception room is provided for their guests. Students may confer with the Advisers on any afternoon, except Saturday, between 2 and 4, in Room 301 University Hall, or if necessary by special appointment. *All women students are requested to consult with the Advisers of Women before engaging rooms offered by unauthorized persons.*

**Location.** Intramural collegiate and professional courses will be given at Columbia University. Extramural courses will be given at the Long Island College Hospital, corner of Henry and Amity Streets, Brooklyn; at Bridgeport; Hartford; Montclair; New Britain; Scranton; South Norwalk; Southington; Washington, D. C.; and Yonkers; and at centers where there may be sufficient demand.

Classes will also be conducted at the New York Chapter of the American Institute of Banking, 138 East Thirty-fifth Street.

The most convenient means of access to the University are the Subway (Broadway and Seventh Avenue Branch) to 116th Street, Columbia University Station, and the Broadway or Amsterdam Avenue surface lines.

**Calendar and Hours.** Columbia University opens on Wednesday, September 28, and Extension courses begin Thursday, September 29. The academic calendar calls for thirty weeks of actual class work. The examination period for the Winter Session begins January 30. The Spring Session will open February 8, and the Extension classes will begin on that date. The examination period for the Spring Session begins May 22. The examinations are given in the hours usually assigned to recitation and lectures. The calendar for University Extension in general is the academic calendar of the University, except in regard to examinations. There

will be no classes in University Extension on the following days: Election Day, November 8; Thanksgiving Day and the two days following (November 24, 25, and 26); December 21 to January 3 inclusive; February 22; April 13 to 17, inclusive; May 30. There will be classes on October 12 and February 12. See pp. 156, 157.

Extension courses are usually given in the afternoon and evening of every week day and on Saturday morning.

**Absences.** It is a student's duty to attend regularly and punctually each class or laboratory exercise in each course. For credit toward a degree or for a certificate of proficiency, attendance at nine-tenths of the sessions is required in addition to the proficiency attested by class work and examination. Absences are counted from the first meeting of the class in each Session.

A student may be absent without penalty in a Session as follows: from a course meeting once weekly, twice; from a course meeting twice weekly, three times; from a course meeting three times weekly, four times; from a course meeting four times weekly, five times; from a course meeting five times weekly, six times.

In case this limit is exceeded, a student desiring credit for the course may submit a statement showing the cause of each absence. If, in the judgment of the Administrative Board, these causes were imperative, full or partial credit for the course may be assigned by the Director upon the recommendation of the Administrative Board, in accordance with the extent and reason of the student's absences and the standing attained in the course.

Tardiness counts as half an absence.

For discontinuance of attendance or cancellation of registration, students must present their applications at the office of University Extension.

**Examinations.** Two examinations are regularly held, one at the close of the Winter Session, January 30 to February 4, inclusive, and the second on the termination of the course, May 22 to May 27, inclusive. A mid-term report is sent to the Registrar by the various instructors, approximately on November 21 and March 31.

(The final examinations in some of the accounting classes do not follow the usual University Extension schedule, but are held on Saturday of the examination week in University Extension. Examinations are held both at 2:30 p. m. and 7:30 p. m., the student choosing the session which he will attend.)

Students who fulfill the conditions of registration, attendance, and accomplishment of work prescribed, will receive a report of standing from the Registrar within three weeks after the close of each Session.

The student's performance in a course is reported according to the following grades: A, excellent; B, good; C, fair; D, poor (not passing); F, total failure. In graduate courses, P indicates passed; F, failure. H indicates a record of satisfactory attendance only.

**Deficiency Examinations.** The grade F received in any course as a final mark does not allow the student under any circumstances to take a deficiency examination. The grade D is not a passing mark; it does, however, allow the student to apply for a deficiency examination. Deficiency examinations are held only twice annually. For a student conditioned in the Winter Session, the

examination will be held in April, and applications must be filed with the Registrar before March 1. For a student conditioned in the Spring Session, the examination will be held in September, and applications must be filed by August 1. Deficiency examinations will not be given at other times; nor will they be allowed after the lapse of one year from the date when incurred.

**The University Press Book Store.** The University Press Book Store, situated in the Journalism Building, supplies students and officers with text-books and other needed material at stated discounts from list prices. These discounts are fixed by the Trustees of the Columbia University Press. The store will be open daily from 8:30 a. m. to 7 p. m.; Saturday from 8:30 a. m. to 5 p. m. It will also be open in the evening from September 28 to October 27, and from February 8 to March 4, until 9 p. m.

**Architecture.** In regard to courses leading to the Certificate of Proficiency, see special bulletin, *Courses in Architecture Leading to the Certificate of Proficiency.*

**Business (Evening Courses).** Columbia University, through its University Extension Department, offers evening courses in business, including a complete series of classes leading to the Certificate in Business. For full particulars see the *Announcement of Evening Courses in Business.*

The Alpha Kappa Psi professional fraternity offers annually the sum of \$25.00 to that student who completes with distinction in the Department of University Extension, courses in Second Year Accounting, Second Year Law, Corporation Finance and 4 points of electives. Candidates must have completed in Columbia University the required courses of the first year for the Certificate in Business, must be regularly registered for the Certificate in Business and must excel in influence among their fellow students. The award is made by a committee appointed by the Director of University Extension.

**School of Business.** Graduates of high schools, who afterward satisfactorily complete in the Department of University Extension work equivalent to that offered by Columbia College or Barnard College in the first two years, will be admitted to the School of Business. The degree of Bachelor of Science is conferred upon the completion of the course in the School of Business. Those who desire to take in University Extension the two preliminary years of collegiate work should follow the program suggested below, completing 64 points, including English eA1-A2, and one year of an approved course in English literature; two years of French or Spanish or German; Philosophy e1-2; History e1-2; Economics e1-2; Business e11-12 (Economic geography); Mathematics eA1 and eA3; and 15 points in electives. Candidates for the Secretarial Course in the School of Business must offer in their collegiate work a second year of English composition. Mathematics eA1 and eA3 are not required, but may be offered in lieu of Business e11-12.

**College Course.** Students who are unable for financial reasons to enter college upon graduation from a secondary school may, upon completion of the entrance requirements, profitably continue their training through University Extension classes while employed during the daytime, with the expectation of being later admitted to Columbia College with advanced standing as candidates for the degree of Bachelor of Arts.



*Arrangement of Collegiate Subjects*

Students in University Extension will be assisted in selecting their subjects of study in the office of the Director, Room 301 University Hall.

The following arrangement of courses is given here as an aid in the grouping of subjects and not as indicating any convenient route to a degree.

FIRST YEAR		THIRD YEAR	
	<i>Points</i>		<i>Points</i>
English eA1-A2 . . . . .	6	Philosophy . . . . .	4
Modern or ancient language . . . . .	6	History e1, e2 . . . . .	6
Mathematics . . . . .	4	English e21-22 . . . . .	4
	—	Modern language . . . . .	2
	16		—
			16
SECOND YEAR		FOURTH YEAR	
	<i>Points</i>		<i>Points</i>
English eB1-B2 . . . . .	4	English e23-24 . . . . .	4
Philosophy e1-2 . . . . .	6	Zoology e1a-2a . . . . .	4
Modern or ancient language . . . . .	6	Economics e1-2 . . . . .	6
	—	Government e1-2 . . . . .	6
	16		—
			20
FIFTH YEAR			
	<i>Points</i>		<i>Points</i>
Modern language . . . . .	6		
History . . . . .	6		
Science . . . . .	8		
	—		
			20
Total . . . . .	88		

**College Entrance Course.** Mature students who are unable to attend a secondary school and other persons engaged in business throughout the day may prepare themselves for college by pursuing courses in University Extension. These courses are not open to immature students or to any who should be in high school or a preparatory school. The following schedule is suggested for those who desire a complete training in subjects required for college entrance. Students may elect the complete course or only such classes as they may need.

In order to count any course in University Extension toward admission, candidates must, before beginning the course, secure written permission from Professor A. L. Jones, Director of Admissions, Room 321 University Hall; except candidates for admission to Barnard College, who must secure written permission from the Dean of Barnard College.<sup>1</sup>

<sup>1</sup> While work done in University Extension courses is not primarily accepted in lieu of entrance examinations to Barnard College, entrance conditions may be removed by a grade of at least C, subsequently obtained in the appropriate Extension courses. In exceptional cases, by reasons of weight, the Dean may grant permission to a student to count an Extension course for entrance credit, without having taken an entrance examination in the subject.



Persons of unusual ability may complete the entire schedule given below in less than four years; this is true especially of those who may be able to attend in the late afternoons as well as at night.

<i>First Year</i>	<i>Third Year</i>
English eW1-W2	English eY1-Y2
One elementary language	History eX1-X2
Mathematics eX3, eX6	Physics eA1-A2
<i>Second Year</i>	<i>Fourth Year</i>
English eX1-X2	Chemistry eA1
Intermediate language	Mathematics eA1, A2
Mathematics eY1	Elective subjects

A complete list of courses given in University Extension that may be offered for entrance credit follows:

Botany e1 or e2, for botany  
 Chemistry eA1 or eA2, for chemistry  
 Drawing eW1 or eW2, for drawing  
 English eW1-W2 and eX1-X2, for English *a*  
 English eY1-Y2, for English *b*  
 French eA1-A2, for elementary French  
 French eB1, for intermediate French  
 French eB2, for advanced French  
 \*Geography e25-26, for physical geography  
 German eA1-A2, for elementary German  
 German eB1, for intermediate German  
 German eB2, for advanced German  
 Greek e1-2, for Greek *a*, *b*, and *g*  
 History eX1 or eX2, for American History *g*  
 \*History e5-6, for Ancient History *a*  
 Italian e1-2, for elementary Italian  
 Latin eX1-X2 or eX8 and eX3, for second-year Latin  
 Latin eY1 or eY8, for Virgil  
 Latin eY3 or eY4, for third-year Latin  
 Latin eY5 or eY6, for advanced Latin prose composition  
 Mathematics eX1 or eX2 or eX3, eX6, for elementary algebra  
 Mathematics eX1 or eX2 or eX5 or eX6, for algebra, quadratics and beyond  
 Mathematics eY1 or eY2, for plane geometry  
 Mathematics eA1, eA3, e1 (any two), for advanced mathematics  
 \*Physics eA1-A2, for elementary physics  
 Spanish eA1-A2, for elementary Spanish  
 Spanish eB1, for intermediate Spanish  
 Zoology e9-10, for zoology

**Engineering Courses.** In taking classes in engineering and allied subjects in University Extension a student may adopt one of two methods in arranging his studies. (1) He may select only the class or classes in which he is especially interested, and which will be of most immediate assistance to him in his present

\* This course is a collegiate subject, counting for credit toward degrees. If the entire course in both Sessions is completed, one-half of the credit may count for the removal of entrance conditions, and the remainder toward a degree.

work. In every case he must be careful that he offers all the prerequisites for each course which he proposes to pursue. University Extension offers many classes of this nature, planned especially for mature students already engaged in engineering work and at liberty to devote only a few evenings a week to professional study. Such courses do not in themselves lead to any degree, though some of them bear credit applicable to degrees, when other conditions have been fulfilled, as stated below. (2) The student may plan his work in such a way that when supplemented by day attendance, after having completed satisfactorily the entrance requirements, it will lead ultimately to a degree in engineering.

A student desiring to matriculate in the Schools of Mines, Engineering, and Chemistry is required to present, in addition to the regular four years of the preparatory school, at least three years of collegiate work.

University Extension has provided a schedule whereby a student can complete this collegiate preparation by studying in the evening. He will then be allowed to enter the Schools of Mines, Engineering, and Chemistry, provided always that he has satisfied the requirements in regard to the work of the preparatory school. The collegiate course outlined below is that recommended by the Faculty of Applied Science. It presupposes a full four year high school course, including, among other subjects, intermediate algebra, solid geometry, trigonometry, physics, chemistry, four years of English, and three years of a modern language.

In order to avoid conflicts the subjects should generally be taken in the order suggested, though in many cases the program will necessarily be rearranged to suit the needs of the individual student. All persons thinking of pursuing this course are urged to confer with the officers of University Extension in Room 301 University Hall. A few subjects in the third, fourth, and fifth years are not given at present in University Extension, but they will be added as the need arises.

## FIRST YEAR

<i>Winter Session</i>	<i>Points</i>	<i>Spring Session</i>	<i>Points</i>
English eA1 . . . . .	3	English eA2 . . . . .	3
Mathematics e1 . . . . .	3	Mathematics e4 . . . . .	3
Physical education eA1 . . . . .	2	Physical education eA2 . . . . .	2
History e1 . . . . .	3	History e2 . . . . .	3
<hr/>		<hr/>	
11		11	

## SECOND YEAR

<i>Points</i>	<i>Points</i>
Mathematics e55 . . . . .	3
Philosophy e1 . . . . .	3
English e17 . . . . .	2
English eBr . . . . .	3
Economics e1 . . . . .	3
<hr/>	
14	14

## THIRD YEAR

<i>Points</i>		<i>Points</i>	
Chemistry e3 . . . . .	5	Chemistry e4 . . . . .	5
French eB9 or German eE1 . . . . .	3	French e4a or German eE2 . . . . .	3
Mathematics e57 . . . . .	3	Mathematics e22 . . . . .	3
<hr/>		<hr/>	
11		11	

## FOURTH YEAR

<i>Points</i>		<i>Points</i>	
Chemistry e11 . . . . .	5	Chemistry e12 . . . . .	5
Mechanics e1 . . . . .	2	Physics e6 . . . . .	6
Elective . . . . .	2	<hr/>	
<hr/>		11	
9			

## FIFTH YEAR

<i>Points</i>		<i>Points</i>	
Mechanical drawing e1 . . . . .	2	Mechanical drawing e2 . . . . .	2
Mechanical drawing e3 . . . . .	2	Mechanical drawing e4 . . . . .	2
Physics e7 . . . . .	7½	Physics e8 . . . . .	7½
Physics e49 . . . . .	1½	Physics e50 . . . . .	1½
<hr/>		<hr/>	
13		13	
		Electives . . . . .	6
		Total . . . . .	124

A scholarship, affording free tuition in the graduate courses of the Faculty of Applied Science, Schools of Mines, Engineering, and Chemistry will be given each year to the student who completes the above outlined evening course with the highest record.

**Law.** In order to secure the degree of Bachelor of Laws from Columbia University, a student must present 94 points of collegiate study before entering the course. Students planning at some future time to study law are, therefore, advised to complete the collegiate work outlined on p. 9 which, when supplemented by one course of six points, will answer the entrance requirements provided the student has also satisfactorily completed the 15 units of high school studies required for entrance to college.

**Medicine.** In order to enter the College of Physicians and Surgeons in Columbia University, students must present two years of collegiate study, amounting to at least 72 points in addition to the regular high school preparation.

This work must include one year of physics, aggregating eight semester hours or more, one year of inorganic chemistry based on college entrance chemistry, one-half year of qualitative analysis, one-half year of organic chemistry, one year of biology, aggregating six semester hours or more based on a year of secondary school biology, two years of college English, and one year of college French or German based on two years elementary study of the same in a secondary school, or one year in college. Students should obtain the current *Announcement of the College of Physicians and Surgeons* where these requirements are, stated in full.

Students intending later to study medicine may complete the evening collegiate course outlined on p. 9, which will answer the collegiate requirements for

admission. It is necessary, however, that they include advanced courses in chemistry (two years consisting of general inorganic, qualitative, and organic), physics, zoology (one full year each), English, two years, and French or German at least one year beyond the elementary requirement. Before registering for any collegiate classes in the pre-medical course, students must have satisfactorily fulfilled the requirements for admission to Columbia College.

**Collegiate Courses at the Long Island College Hospital.** Columbia University offers a two year course of collegiate training at the Long Island College Hospital, Amity and Henry Streets, Brooklyn, N. Y., for students who intend to enter that institution. This course of two years will be useful to students who desire to enter other medical schools. (See special circular.)

**Optics.** A two year professional course in optometry, leading to a certificate issued by the University, is given by University Extension. The required courses in each year are mentioned in the outline given below. A special circular describing this series and giving full information concerning the entrance requirements may be obtained from the Secretary of the University. Two scholarships covering all tuition fees in optometry are awarded annually by the American Optical Company of Southbridge, Massachusetts, and one by the New York City Optometrical Society. Applications must be filed by May 1.

#### FIRST YEAR

Optometry A1 Plane geometry (review) and plane trigonometry  
 Physics B1-B2 General elementary physics  
 Optometry 1-2 Theoretical optics  
 Optometry 3-4 General anatomy with special reference to the anatomy and physiology of the eye  
 Optometry 6 Practical optics  
 Optometry 8 Theoretical optometry

#### SECOND YEAR

Optometry 9-10 Theoretical optics  
 Optometry 11-12 Physiological optics  
 Optometry 13-14 Practical optics  
 Optometry 15-16 Theoretical optometry  
 Optometry 17-18 Pathological conditions of the eye  
 Optometry 19-20 Practical optometry and clinic

The fee for the certificate is \$10.

**Secretarial Studies.** The Department of University Extension has provided a series of courses for students in secretarial studies.

These courses are planned properly to equip students who desire to become private secretaries, or to hold important positions in offices as assistants to public officials or to persons engaged in professional pursuits.

#### *Two-year Course for High School Graduates*

Graduates of approved high schools, fulfilling the requirements for admission as stated in the pamphlet entitled "Secretarial Studies," will be admitted as candidates for a certificate in University Extension. The complete series will demand



two years, although this time may be shortened by attendance at Summer Sessions. Students may use only classes in University Extension.

*Courses leading to a Certificate in Secretarial Studies:*

	<i>Points</i>
Stenography e1-2, Typewriting e1-2, Stenography e9-10, counted as . . . . .	8
English eA1-A2 . . . . .	6
Modern languages . . . . .	12
Secretarial correspondence e1-2 or English eB5-B6 . . . . .	6
Business e7-8 (Business administration) . . . . .	4
Secretarial bookkeeping . . . . .	4
Typography . . . . .	2
Elocution (unless advanced credits are offered) . . . . .	4
Elective . . . . .	2
<b>Total</b> . . . . .	<b>48</b>

- The fee for this certificate is \$10.

A course of one year leading to a certificate is arranged for college graduates by the School of Business. See special circular of *Secretarial Studies*.

Students may offer toward the degree of B.S. certain secretarial studies in the two years of work in the School of Business. See special announcement.

April 15, Saturday, is the last day for filing applications for the professional certificate in Secretarial Studies.

**The Institute of Arts and Sciences.** The Institute of Arts and Sciences, established by action of the Trustees of Columbia University on February 3, 1913, is a division of the Department of University Extension. The aim of the Institute is to provide a popular late afternoon and evening program consisting of general lectures and events of a cultural nature.

The program is planned for busy men and women. Its scope includes single lectures and short series of not over six lectures on history, literature, art, music, geography, science, and on current economic and social problems; it comprises also illustrated travel lectures, recitals, dramatic readings, and vocal and instrumental as well as chamber music concerts.

The program is subscribed for as a whole. For annual dues, which are merely nominal, see the *Announcement of the Institute of Arts and Sciences*.

The admission ticket is transferable, and with the exception of certain afternoon occasions admits two persons to the entire program of approximately 225 meetings. Altogether the ticket includes free admission to approximately 225 lectures, readings, concerts, recitals, etc., throughout the season. The program continues from October to April.

The University auditoriums are used. Memberships are accepted at any time and are good for one calendar year from the first of the month nearest the time of enrollment.

The annual announcement describing in detail the program of the Institute will be mailed upon request.

**Home Study Courses.** Columbia University through the Department of University Extension offers Home Study courses for persons who are unable to

attend classes conducted at the University. There are many individuals who, for a variety of reasons, are compelled to postpone their academic work and who are very reluctant to drop it completely. According to the University's policy of providing a liberal education for all who desire it, these courses have been instituted for the benefit of those who wish, even in this limited and restricted manner, to engage in advanced study. A special circular will be sent upon request.

The University, although it does not require previous academic work for admission to Home Study courses, asks each prospective registrant to give satisfactory indications that he or she can pursue further study to advantage, and prospective students are urged to enroll only in those courses for which previous study and training has prepared them and from which they may derive the greatest amount of pleasure and profit.

No academic credit is given for Home Study courses. Upon the satisfactory completion of the work prescribed by the instructor, a certificate stating that the course or courses have been completed will be given by the Registrar of the University.

Enrollment in Home Study courses may begin at any time, but the Department reserves the right to limit the number or length of courses for which one individual may enroll.

All courses aim to cover the same ground as those given to resident students, but Home Study is outlined and administered in a way that will enable mature non-resident students to take advantage of their experience which, in the case of resident students, is compensated for by more intensive reading. All instructors are members of the staff of one of the departments of the University and all work is outlined by them and carried out under their supervision and direction.

Instruction will be given in the following subjects:

Accounting	English composition	Modern drama
Actuarial mathematics	English literature	Navigation
Agriculture	European history	Philosophy
Algebra (Elementary, intermediate, college)	Foreign exchange	Photoplay writing
American history	French	Practical applications of psychology
American literature	Geometry—plane and solid	Psychology—Elements of
Analytic geometry	German	Psychology of advertising and selling
Astronomy	Government	Rumanian
Business administration	History—American and European	Russian
Business English	History of art	Secretarial studies
Business organization	Insurance	Short story
Classics—Greek and Latin	Investment finance	Sociology
Community organization	Italian	Spanish
Corporation finance	Law—Nature and functions	Textiles
Differential and integral calculus with applications	Literature, English and American	Trigonometry
Differential equations	Magazine articles and newspaper writing	Typography
Domestic science	Mathematics—actuarial	
Economics		
Economic geography		
Elements of psychology		

*Home Study Clubs.* Arrangements can be made with the Director of University Extension for the organization of Home Study clubs in any of the subjects included in the Home Study announcement. For further information apply to the Director of University Extension, Room 301 University Hall, Columbia University, New York City.

### Degrees

**Regulations Governing Credit toward the Degrees of A.B. in Columbia College and Barnard College and B.S. in Teachers College.** Students of Columbia College, Barnard College, and Teachers College will be permitted to attend Extension courses which are approved by the Committees on Instruction and will be allowed to count them toward the degrees of A.B. and B.S. under the following regulations:

1. The election of Extension courses must be approved in advance by the Committees on Instruction.
2. Students in Barnard College or in Teachers College will not be allowed to exceed a total of 16 hours a week, including the hours of Extension courses, save for reasons of weight and by the special permission of the Committees on Instruction.
3. Students desiring these courses to count toward the degrees of A.B. and B.S. must obtain at least a grade of C.
4. Matriculated students electing Extension courses after having obtained the approval of the Committees on Instruction must register for these courses at the office of the Registrar and pay the fees required. Teachers College students taking Extension courses must register for such work at the Registrar's office of Teachers College, and pay the fees therefor in Teachers College.

All students who intend to apply for advanced credit in Columbia College for work done in University Extension must have the authorization of the Office of Admissions. In order to obtain such authorization the student should submit his complete previous record at the earliest possible moment.

Students who desire credit in Barnard College must make all their arrangements through the Registrar of Barnard College.

Properly qualified students may, on the approval of the Committee of the Council on University Undergraduates, count Extension courses toward the new B.S. degree in general studies established for University undergraduates. For additional information address the Secretary of the University.

**For the Degrees of Master of Arts and Doctor of Philosophy under the Faculties of Political Science, Philosophy, and Pure Science.** The courses in University Extension which have been approved by the Faculties of Political Science, Philosophy, and Pure Science and by the Executive Committee of the University Council may be counted in part fulfillment of the residence requirements for the degrees of Master of Arts and Doctor of Philosophy, subject to the rules governing these degrees as defined in the departmental announcements. These courses are numbered 100 and above and marked Credit II.

The *Announcement of the Faculties of Political Science, Philosophy, and Pure Science*, which will be sent upon application to the Secretary of the University, contains full information with regard to fellowships, scholarships, prizes, student



employment, appointments, University and tuition fees, and all other University matters of interest to advanced students. It contains also a statement of the University requirements for the degrees of Master of Arts and Doctor of Philosophy and should be consulted by every candidate for those degrees.

**For the Degree of Master of Science.** The degree of Master of Science is awarded as a graduate professional degree under the Faculty of Applied Science, the Faculty of Practical Arts, the School of Architecture, and the School of Business. For information with regard to candidacy for this degree application should be made to the Dean or Director of the Faculty or School concerned.

**Courses in Teachers College.** Teachers College in its School of Education offers to matriculated students a number of its regular courses at hours in the afternoons and on Saturday mornings which are convenient for teachers. These courses include work in the history and philosophy of education, educational administration and school supervision, educational psychology and measurements, rural education, vocational education, religious education, scouting and recreational leadership, secondary education, elementary education, kindergarten education, and certain courses on the methods of teaching academic subjects. A bulletin describing these afternoon, evening, and Saturday courses may be obtained from the Secretary of Teachers College.

Teachers College offers also in its School of Practical Arts, at similar hours and in the evenings, regular and special classes in foods and cookery, clothing and textiles, household administration, nursing and health, household chemistry, fine arts, music, physical education, industrial arts, drawing, designing, etc. The special classes in the practical arts for Extension students are fully described on pp. 133, following of this bulletin.

### Certificates

For information in regard to certificates offered in University Extension, see Architecture, p. 25; Business, p. 8; Optometry, p. 13; and Secretarial Studies, p. 14.

**Relation of University Extension to other University Work.** 1. The requirements for the degree of Master of Arts are stated in full in the *Announcement of the Faculties of Political Science, Philosophy, and Pure Science*, which will be sent upon application to the Secretary of the University. This bulletin should be consulted by all students electing graduate courses.

2. Students taking Extension courses who desire to become candidates for the degree of Bachelor of Arts or Bachelor of Science or for professional degrees in Science, Law, Medicine, Business, and Practical Arts, should make application to be received as such to the Director of Admissions, Room 321 University Hall. The requirements for admission to the University as a candidate for baccalaureate degrees are set forth in the bulletin, *Entrance Examinations and Admissions, 1921-1922*, which may be obtained on application to the Secretary of the University.

3. Students taking Extension courses which they desire to have credited in Teachers College toward the degree of Bachelor of Science should consult the Secretary of Teachers College before registration. For full information in refer-



ence to the requirements for admission to the School of Education or the School of Practical Arts of Teachers College, apply to the Secretary of Teachers College.

4. Students using Extension courses for the purpose of securing entrance credits should consult Professor Adam Leroy Jones, Room 321 University Hall. For admission to Barnard College, students should consult the Dean of Barnard College before registering.

### Enrollment

(Corrected to March 1)

Year	Morningside	Extramural	Home Study	Total
1910-1911	922	390		1,312
1911-1912	1,329	271		1,600
1912-1913	2,016	296		2,312
1913-1914	2,664	723		3,387
1914-1915	3,407	754		4,161
1915-1916	3,960	821		4,781
1916-1917	5,328	680		6,008
1917-1918	5,944	713		6,657
1918-1919	6,213	536		6,749
1919-1920	11,492	997	115	12,604
1920-1921	11,645	1,241	202	13,088

### Extramural Courses in Local Centers

To facilitate the work of instructors away from the University, the Administrative Board may institute local centers. These may be organized by local boards of education, societies and clubs. Such local organizations determine upon the courses after consultation with the Director of University Extension. They enlist local interest, provide by fees or otherwise for the expenses of the courses, and furnish lecture halls and janitorial service. The Administrative Board will establish and conduct local centers when suitable arrangements may be made and sufficient guarantees secured.

Courses of fifteen weekly periods of two academic hours each may be offered in local centers in either the Winter or Spring Session for classes numbering at least twenty-five students. Such courses may be given academic credit on approval of the appropriate authorities at Columbia University. Those desiring to arrange for such courses should communicate with the Director of University Extension, stating the course desired and the number of students of a guaranteed enrollment. The fee for such courses is set at \$16.00 for each student for the fifteen periods.

Students taking courses at a local center will register at that center, in accordance with instructions given in the circulars describing the courses.

## COURSES OF INSTRUCTION\*

NOTE. The University reserves the right to withdraw or modify these courses, or to change instructors, as may seem wise.

Courses corresponding and equivalent to prescribed courses of Columbia College are designated by letters A and B. A<sub>1</sub>, B<sub>1</sub> refer to the Winter Session (September–January) in such a course; A<sub>2</sub>, B<sub>2</sub> to the Spring Session (February–May). In numbered courses, odd numbers designate the Winter Session, even numbers the Spring Session.

In the statement of each course the prerequisites are indicated except that the equivalent of the first half of a hyphenated course (*e. g.*, English e<sub>1-2</sub>) is usually assumed to be a prerequisite for admission to the second half.

**Credits.** For courses numbered 100 to 299, inclusive, undergraduate credit will be determined by the various faculties under which the student intends to apply for such recognition. For entrance credits, see p. 10.

The question of credits for Barnard College, Columbia College, and College of Physicians and Surgeons must be determined finally on consultation with the appropriate Committee on Instruction.

Courses marked Credit I—May be counted toward the degrees of A.B. and B.S., in all parts of the University where these degrees are given, and toward appropriate diplomas in teaching. See p. 16. For other courses, which under certain conditions may be offered for credit by candidates for the A.B. or B.S. degree, see Credit II.

Courses marked Credit II—May be offered by graduate students toward the higher degrees. Open also to undergraduates on the approval of the appropriate Committee on Instruction obtained in advance.

Courses marked Credit III—Are open only to graduate students and may be offered toward the degrees of A.M. and Ph.D.

Courses marked Credit IV—May be counted for matriculated students in Teachers College toward the degree of B.S. See p. 133.

Courses marked Credit V—May be counted toward the appropriate degrees in the Faculty of Applied Science, Schools of Mines, Engineering, and Chemistry, and Architecture.

Courses marked Credit VII—May be counted toward the degree of LL. B. and in proper cases may count toward the degree of LL.M. (see *Announcement of the School of Law*), and for properly qualified students (see *Announcement of Columbia College*) toward the degree of A.B.

Courses marked Credit IX—May be counted toward the degree of B.S.

Only courses thus designated will be counted toward degrees.

The fees and points as stated with the various courses are for each Session. In the case of non-credit courses, the number of points is published merely to give a general idea of the amount of work required of the student.

\*Rooms assigned in this announcement are for the Winter Session only. Consult corrected Spring Session Announcement for Spring Session courses.

Accounting, see pp. 37, 38, 47-49

## AGRICULTURE

Columbia University through the University Extension Department offers courses in Agriculture, which will be open to students who desire to take only work in this subject with or without credit. These courses may also, with the approval of the Committee on Instruction, form part of the curriculum leading to the degree of A.B. for students of Columbia College. (See Special Circular, *Announcement of a Four Year course in Agriculture.*)

Students desiring to undertake courses in Agriculture should before registering consult Professor O. S. Morgan, Room 511 Schermerhorn Hall; office hours 11-12 a. m., Wednesday, Thursday, and Friday, and at other hours by appointment. He will be glad to assist students in arranging their programs, and will outline classes in Agriculture to cover partial or complete time of one or more sessions of study. Students who have special objects in view, such as preparing to become farm operators or specialists, should consult him about their programs. The courses have been prepared so as to be of practical assistance to those who desire to improve their farming venture, or who plan to buy a farm but need introductory courses.

The work of the Winter Session opens on September 29, 1921, but students who do not desire credit may register as late as November 9. All courses are open to students in the Spring Session regardless of attendance in the Winter Session.

**Agriculture e1-2—Introduction to agriculture; field crops.** Lectures and laboratory. Credit I, IV. 3 points each Session. Fee \$24 each Session. Professor O. S. MORGAN

Section 1—9:10-10:50 a. m., Saturday (lectures). Room 505 Schermerhorn; 11 a. m.-12:50 p. m., Saturday (laboratory). Room 502 Schermerhorn

Section 2—7:20-9 p. m., Thursday (lectures). Room 505 Schermerhorn; 11 a. m.-12:50 p. m., Saturday (laboratory). Room 502 Schermerhorn (Section 2 is offered in the Winter Session only)

The object of this course is to give the student entering the study of agriculture a clear understanding of the main problems and principles of present-day scientific agriculture, particularly as practised in the eastern United States. All students undertaking the study of agriculture for the first time should take at least the Winter Session of this course.

Winter Session: The essentials of crop production as affecting the American cereal crops. Brief consideration will be given the following: crop rotation, fertilizers, manures, liming, varieties, cultural methods, food values, harvesting, storage, farm machinery, seed improvement, testing, and cost production, especially as relates to corn, wheat, and clover culture.

Spring Session: The production of small grains, hay, grass, legumes, potatoes, and roots. The management of hay fields, seeding mixtures, alfalfa, vetches, soy beans, cereals for hay; pastures, seeding and management; the production of potatoes root and emergency crops.

Laboratory work will include the study of the characteristics of farm crops, judging and scoring of corn and other grains; testing for germination and purity, reports on special topics, plot experiments in the greenhouse, and excursions to industrial plants and farms.

**Agriculture e1x-2x—Lectures only, of Agriculture e1-2.** 2 points each Session. Fee \$16 each Session. Professor O. S. MORGAN

Section 1—9:10-10:50 a. m., Saturday. Room 505 Schermerhorn

Section 2—7:20-9 p. m., Thursday. Room 505 Schermerhorn (offered Winter Session only)



**Agriculture e3-4—Soils and fertilizers.** Lectures and laboratory. Credit I, IV. 3 points each Session. Fee \$24 each Session. Professor O. S. MORGAN  
 Section 1—2:10-3:50 p. m., Thursday (lectures); laboratory arranged at convenience of students, or 2:10-4 p. m., Friday. Room 505 Schermerhorn, and agricultural greenhouse

Section 2—7:20-9 p. m., Thursday (lecture); laboratory arranged at convenience of students, or 2:10 p. m., Saturday. Room 505 Schermerhorn, and agricultural greenhouse. (Offered Spring Session only)

The object of this course is to give the novice as well as the practical farm operator a thorough-going understanding of the basis of successful soil management for crop production. The Spring Session of this course should form a part of every "city" farmer's studies in technical agriculture. The laboratory work is essential.

Winter Session: Principal soil types: clearing, draining and fitting land; tillage and tillage practices; organic matter, muck-lands, green manure cropping; lime, liming acid soils and tests for soil acidity; hillside soil management. Excursions to well-equipped practical farms.

Spring Session: Fertilizers, manures, physical and chemical factors, soils and crop problems in agriculture from the standpoint of soil fertility and productivity; the supply in the form of manure, etc., and the practical economic consideration of maintaining and increasing the crop-producing power of lands. Renovation of run-down farms. Special plant studies on soils and fertilizers in the laboratory for soil analysis. All students entering upon the study of Agriculture should, if possible, take both Sessions of this course.

**Agriculture e3x-4x—Lectures only, of Agriculture e3-4.** 2 points each Session. Fee \$16 each Session. Professor O. S. MORGAN

Section 1—2:10-3:50 p. m., Thursday. Room 505 Schermerhorn

Section 2—7:20-9 p. m., Thursday. Room 505 Schermerhorn (offered Spring Session only)

**Business e39—Agricultural cooperation.** Credit IV, IX. 2 points Winter Session. Professor A. HOBSON

3:10-4 p. m., Monday and Wednesday, Room 619 Schermerhorn Fee \$16

This course is an analysis of the economic functions and services performed by farmers' cooperative organizations, together with the problems of organizing and financing cooperative companies. The development, extent, and present status of farmers' cooperative organizations in this country and abroad will receive consideration.

**Business e40—Consumers' cooperation.** Credit IV, IX. 2 points Spring Session. Professor A. HOBSON

3:10-4 p. m., Monday and Wednesday. Fee \$16

This course deals with the economic principles involved in cooperative action among consumers. It will also take up the development, extent, and present status of the cooperative movement among consumers in the United States and in foreign countries.

**Business e41-42—Farm management.** Readings, conferences, reports and excursions. Credit I, IV, IX. 3 points each Session. Professor O. S. MORGAN  
 4 p. m., Wednesday, or by appointment. Room 511 Schermerhorn. Fee \$24 each Session

The course is an introduction to agricultural economics. The Winter Session gives a thorough review of the chief problems in American farm management. Topics of study: cropping plans, farm lay-outs, types of farming, intensive *vs.* extensive, apportionment of capital in farming, stock, machinery, buildings, individual farm projects, farm accounts. The Spring Session deals with the chief features of agricultural economics. Special attention will be given to current publication in the field of farm economics.

NOTE. Where practicable, students, registering for this course, should take Agriculture e1-2 or e11 and e16, and Business e43-44.



**Business e43-44—Economics of food marketing.** Credit IV, IX. 2 points each Session. Professor A. HOBSON

2:10-3 p. m., Monday and Wednesday. Room 619 Schermerhorn. Fee \$16 each Session

This course deals with the fundamental principles involved in the field of market distribution. Special emphasis will be given to the marketing of food products. The work discusses the marketing processes encountered by those products in their journey from the farmer to the consumer. Attention is given to such topics as: grades and standards, storage, transportation, the middleman's services, charges, future trading, price making forces, cooperative organizations, parcel post and express methods, and municipal markets. Some of the more important of the many proposed marketing reforms will also be discussed.

**Agriculture e11—Tree fruits.** Lectures, laboratory, and field work. Credit I for students of Columbia College taking the combined course in agriculture. 3 points Winter Session. Mr. HUGH FINDLAY

7-8:40 p. m., Monday and Wednesday. Room 505 Schermerhorn. Fee \$24

The principles underlying the production of tree fruit, sites for plantations, soils, tillage, fertilization, propagation, planting, cropping, thinning, pruning, rejuvenating, spraying, harvesting, storing, and grading. The more common insects and diseases of the orchard will be identified and methods of control given.

**Agriculture e12—Home fruit growing.** Lectures and demonstrations. 2 points Spring Session. Mr. HUGH FINDLAY

7-8:40 p. m., Monday. Fee \$16

Tree and small fruit for the home garden: application of modern methods to the adaptation of varieties to soil and climate; tillage, fertilizers, planting, pruning, renovating, thinning, spraying and storing.

**Agriculture e13—Bush fruits, strawberries and grapes.** Lectures and laboratory. 3 points Winter Session. Mr. HUGH FINDLAY

4:20-6 p. m., Monday and Wednesday. Room 516 Schermerhorn. Fee \$24

Bush fruits, grapes, and strawberries with considerations similar to those developed in the course on tree fruits, but applied to the study of small fruits.

**Agriculture e15—Floriculture.** Lectures and practical work. 3 points Winter Session. Mr. HUGH FINDLAY

7-8:45 p. m., Tuesday (lectures). Room 505 Schermerhorn; 4:20-6 p. m., Tuesday (laboratory). Greenhouse. Fee \$24

Study of bulbs, bedding plants, florists' crops, palms and ferns. Propagation, potting, watering, spraying, fumigation and ventilation, arrangement of flowers and plants to produce decorative effects. Home Greenhouse management.

**Agriculture e16—Vegetable gardening.** Lectures, laboratory practice, and field trips to local truck gardens. Credit I for students of Columbia College taking the combined course in agriculture. 3 points Spring Session. Mr. HUGH FINDLAY

4:30-6:10 p. m., Wednesday (lectures); 4:20-6 p. m., Monday (laboratory). Fee \$24

Preparation of soil and the making of composts; seeding; hot-bed and cold frame construction and management, adaptations of varieties; transplanting; cropping plans; sites; soils; tools; tillage; spraying, harvesting, storage.

**Agriculture e19-20—Field crops, soils, horticulture and marketing.**

Credit IV. 2 points each Session. Professors O. S. MORGAN, A. HOBSON and Mr. HUGH FINDLAY

9-9:50 a. m., Monday and Wednesday. Room 505 Schermerhorn. Fee \$16 each Session

Specially offered as a general course in subject matter agriculture for rural school teachers and supervisors, and a general course for other students. The topics considered will be soil drainage, tillage, organic matter, liming and fertilizers, field management and crop rotation, culture of cereals, legumes, grasses, pastures, orchards and garden management of tree and small fruits, vegetables and flowers, together with a survey of the field of marketing including cooperative selling and buying organizations. Lecture work will be supplemented by demonstrations and excursions.

For all wishing credit for the course, a report is required.

*Graduate Courses in Agriculture*

**Business e195-196—American field crops.** Credit II, IX. 3 points each Session. 8 hours laboratory, or equivalent. Conference weekly. Report optional. Professor O. S. MORGAN

Hours to be arranged. Fee \$24 each Session

The course consists of a study of the principles underlying the production and management of cereal and forage crops, and farm management factors related thereto.

Advanced studies of pot, jar, and cylinder soils' work is laboratory option.

Prerequisite: Agriculture e1-2, e3-4, Business e41-42, or their equivalent, and satisfactory preparation in botany and chemistry.

**Business e197-198—Soil management.** Fertilizers, soil amendments, soil toxins as related to plant production. Credit II, IX. 3 points each Session. 8 hours laboratory. Conference weekly. Report required. Professor O. S. MORGAN

Hours to be arranged. Fee \$24 each Session

The work consists of fertilizer soil amendments and crop tests of soils that have been surveyed. Careful laboratory tests and studies are emphasized, as well as a thorough study of experiment station and technical publications.

Prerequisite: Agriculture e1-2, e3-4, or their equivalent, and satisfactory preparation in botany and chemistry.

*Special Lectures in Agriculture***Agriculture eXa, b, c, d, e, f—Short lecture courses in agriculture.**

Fee, in full, for each course, \$6 to \$10. Not charged at \$8 per point. No University fee.

Tentative schedule of short courses as planned for the current year in the following subjects:

eXa—Dairying

eXb—Swine raising

eXc—Poultry raising

eXd—Food marketing problems. (See below)

eXe—Landscaping home grounds. (See below)

eXf—Farm drainage, and possibly a course in bee keeping

The hours of these courses will not conflict with the hours of the regular classes in agriculture.

The first one of the series will not be offered before December, 1921, before which time a special circular announcement will be available for distribution to inquirers.

**Agriculture eXd—Food marketing problems.** Lectures. Spring Session. Professor A. HOBSON

4:10-5 p. m., Tuesday and Friday, February 7 to March 10.

Fee \$10. Not charged at \$8 per point. No University Fee

This course is designed to explain in a non-technical manner, the economic nature of our marketing processes and institutions. For the most part, it will deal with those marketing problems which are being considered by the public generally, at the present time. Special emphasis will be given to food products. Several of the lectures will be illustrated.

**Agriculture eXe—Landscaping home grounds.** Lectures and demonstrations. Spring Session. Mr. HUGH FINDLAY

4:15-5:45 p. m., Tuesday and Friday. March 21 to April 14.

Fee \$10. Not charged at \$8 per point. No University Fee

This short course deals with different home landscape problems: approaches, art of imitating nature, planting, making lawns, herbaceous and annual beds, the care and culture of evergreen and deciduous trees and shrubs, rock and bog gardens, roses and bulbs.

## ANTHROPOLOGY

See also Music e105, p. 101

**Anthropology e107-108—Morphology of the human races.** Credit II. 3 points each Session. Dr. B. OETTEKING

Hours to be arranged. Laboratory course. Room 705 Journalism. Fee \$24 each Session

In this course will be treated the anatomical characteristics of races; the methods of descriptive and metrical study of the skeleton and of the body of the living, with special reference to the morphological significance of variations.

**Anthropology e118—Peoples and languages.** Credit II. 3 points Spring Session. Professor FRANZ BOAS

9-10 a. m., Monday and Friday. Fee \$24

The course will consist of a discussion of the distribution of peoples and languages. Particular stress will be laid upon the psychological basis of the structure of different types of languages and upon the processes that bring about changes in the forms and vocabularies of languages.

**[Anthropology e139—Primitive social and political organization.** Credit II. 3 points Winter Session. Not offered in 1921-1922]

7:30-9:30 p. m., Tuesday. Room 707 Journalism. Fee \$24

This course consists of a survey of the most important phenomena of social and political organization among peoples lacking written records. The topics for discussion include: The family; forms of marriage; kinship usages; terms of relationship; the clan; the position of woman; clubs, age-classes, secret societies; government; the origin of political organization.

Reference will be made to the standard ethnographic monographs.

**[Anthropology e140—The culture of the Indians of the Plateau and California areas.** Credit II. 3 points Spring Session. Not offered in 1921-1922]

7:30-9:30 p. m., Tuesday. Fee \$24

This course consists of an intensive consideration of a single region, with special reference to theoretical problems. The topics for discussion include: economic life; industrial activities; art; social organization; social customs; mythological conceptions; religion; ceremonialism; place of the Plains Indian culture in North America generally.



For the study of material and artistic culture the students will be referred to collections in the American Museum of Natural History.

There will be no text-book. Students are expected to have familiarized themselves with Wissler's *North American Indians of the Plains* and will be referred to monographs for research.

**Anthropology e141—Archaeology and ethnology of the southwestern United States.** Credit II. 3 points Winter Session. Dr. P. E. GODDARD  
9-10 a. m., Monday and Friday. Room 707 Journalism. Fee \$24

The course will describe the ruins found in the Southwest and will reconstruct as far as possible the life of the pre-Columbian period. The narratives of the Spanish explorers of 1540 will be explained. The life of the living Indians will be discussed with particular relation to their historical past and to their present-day neighbors.

## ARCHITECTURE

**The attention of students is called to Greek 149, p. 86; to the courses in Fine Arts, pp. 76-78, 138-141; and to the class in Estimating for building construction, structural mechanics eZ5-Z6, p. 62.**

The following afternoon and evening courses in architecture, offered in the year 1921-1922, are open to all qualified students without examination. They correspond, in part, to the work given in the School of Architecture, and equivalent courses will count toward the degree of Bachelor of Architecture for those who can present the required credentials for admission to the School of Architecture (see *Announcement of the School of Architecture*).

A recommended sequence of courses in architecture leading to the Certificate of Proficiency is given in a special bulletin which will be sent upon request. This program should be followed by students beginning the study of architecture, even though they are not candidates for the Certificate, since it presents a logical and orderly system of instruction.

For detailed information in regard to the Certificate course, see special bulletin.

For courses in mathematics and structural mechanics, see pp. 62 and 96-99.

## MATERIALS

The School will furnish lockers and drafting tables; but it will under no condition furnish drawing boards, paper, mounts or other materials.

The School reserves the right to retain any work submitted for credit; drawings, designs, plates, essays, or models, as well as any fellowship competition drawings, whether submitted by graduates or students in residence. *The School will make good to the student any mounts upon which such work may have been presented.*

The Committee on Instruction will select drawings, etc., to be so retained, and all other student work will be returned. Returnable drawings will be kept in the Departmental Library and may be had on application to clerk in charge or to Miss L. Van der Smitten, Room 405 Avery Hall.

Students may consult Mr. H. V. Walsh in the Winter Session during the week of registration, beginning Wednesday, September 21, 1921, and in the Spring Session, beginning Thursday, February 2, 1922, respectively, from 7 to 9 p. m., in Room 301 University Hall.



**Architecture e1—Elements of design: orders.** Credit V. 5 points Winter Session. Professor C. A. HARRIMAN and Mr. H. G. MARCEAU

8-9:40 p. m., Tuesday and Friday. Room 408 Avery; Drafting in Room 504 Avery. Fee \$40

The orders, with graphical discussion of the elementary details of intercolumniation and superposition, mouldings, balustrades, arcades, doors, windows, pediments, arches, domes and vaults.

**Architecture e2—Elements of design: application of the orders.** Credit V. 5 points Spring Session. Professor C. A. HARRIMAN and Mr. H. G. MARCEAU  
8-9:40 p. m., Tuesday and Friday. Fee \$40

Exercises in applications of elementary architectural forms as given in Course e1 and of shades and shadows as given in Course e5, both of which are prerequisites. Renderings of orders and mouldings.

**Architecture e5—Shades and shadows.** Credit V. 4 points Winter Session. Mr. G. M. ALLEN

7-7:50 p. m., Monday, Wednesday, and Friday, Room 408 Avery; Drafting, 8-10:30 p. m., Wednesday, Room 505 Avery. Fee \$32

Accurate and rapid methods for determining the shades and shadows on architectural objects, quick methods of approximation, practical applications.

**Architecture e6—Descriptive geometry.** Credit V. 4 points Spring Session. Mr. G. M. ALLEN or assistant

7-7:50 p. m., Monday, Wednesday, and Friday. Fee \$32

Rapid and unique methods of solving problems relating to right lines and planes; phenomena of lines and surfaces; tangent planes, intersections and developments.

Will not be given for less than ten students.

**Architecture e6a—Shades and shadows.** Credit V. 4 points Spring Session. Mr. G. M. ALLEN or assistant

7-7:50 p. m., Monday, Wednesday, and Friday; Drafting, 8-10:30 p. m., Wednesday. Fee \$32

Architecture e5 repeated in Spring Session.

**Architecture e7—Perspective.** Credit V. 3 points Winter Session. Mr. G. M. ALLEN

8-8:50 p. m., Monday and Wednesday, Room 408 Avery; Drafting, Room 505 Avery. Fee \$24

Brief, direct, and accurate methods; the office method, perspective plan method, approximations, the perspective of shadows, reflections, presentations of drawing.

**Architecture e8—Stereotomy.** Credit V. 2 points Spring Session. Mr. G. M. ALLEN

7-7:50 p. m., Tuesday. Fee \$16

Building stones, architectural stone coursing, architects' and contractors' drawings of stonework, practical problems in stone jointing, visits to stone-cutting plants; vaults and intersections of surfaces, developments.

Will not be given for less than ten students.

**Architecture e8a—Perspective.** Credit V. 3 points Spring Session. Mr. G. M. ALLEN

8–8:50 p. m., Monday and Wednesday. Fee \$24

Architecture e7 repeated in Spring Session.

**Architecture e12—Mechanical equipment of buildings.** Credit V. 4 points Spring Session. Messrs. H. V. WALSH and G. S. KOYL

6–6:50 p. m., Tuesday and Thursday. Fee \$32

The principles, specifications and design of the mechanical equipment necessary in modern buildings, including plumbing and sanitation, heating and ventilating, electrical equipment, auxiliary fire apparatus, elevators, mechanical refrigeration systems and cleaning apparatus. Will not be given for less than ten students.

**Architecture e15–16—Building materials and construction.** Credit V. 4 points each Session. Messrs. L. V. HUBER and G. S. KOYL

8–8:50 p. m., Tuesday and Thursday. Room 603 Avery. Fee \$32 each Session

Problems in construction, involving the preparation of complete sets of working drawings and specifications. A detailed study of building materials; timber, stones, bricks, terra-cotta, cementing materials, steel, etc., and their application to frame, ordinary, mill and fire-proof construction.

Problems in construction drafting and full size detailing arranged with Mr. Koyl.

**Architecture e17–18—Architectural engineering.** Credit V. 3 points each Session. Messrs. H. V. WALSH and G. S. KOYL

7–7:50 p. m., Tuesday and Thursday. Room 603 Avery. Fee \$24 each Session

Steel construction. The design of beams, girders, and columns, and by graphical analysis of roof trusses, piers, arches, and retaining walls.

Problems in construction drafting and full size detailing arranged with Mr. Koyl.

**Architecture e21–22—History of ancient architecture.** Credit IV, V. 2 points each Session. Mr. W. B. DINSMOOR

6–6:50 p. m., Tuesday and Thursday. Room 408 Avery. Fee \$16 each Session

Ancient architecture of Egypt, Assyria, Persia, Judea, Greece, and Rome; historical analysis and critical discussion.

**Architecture e23–24—History of medieval and Oriental architecture.** Credit V. 2 points each Session. Mr. W. B. DINSMOOR

7–7:50 p. m., Tuesday and Thursday. Room 407 Avery. Fee \$16 each Session

Romanesque and Gothic styles in Italy, France, England, Germany, Spain and the Netherlands; Moslem and Oriental Architecture; analytical and critical discussion of the historic development, characteristics and chief examples of medieval styles. Periodic reports and sketches.

**[Architecture e25–26—Renaissance and modern architecture.** Will not be given in 1921–1922; will be given in 1922–1923.]

**Architecture e31–32—Ancient ornament.** Credit I, V. 2 points each Session. Mr. T. F. HAMLIN

6–6:50 p. m., Friday. Room 407 Avery. Fee \$16 each Session

General classifications; origins, primitive and savage ornament; the historic ornament of Egypt, Assyria, Persia, Greece, and Rome, including Ægean, Cypriote, Phœnician, and Etruscan ornament; the development of the styles, the common motives and patterns of both architectural ornament and the minor arts. Periodic drawings.

**Architecture e33-34—Medieval ornament.** Credit V. 2 points each Session. Mr. T. F. HAMLIN

6-6:50 p. m., Monday. Room 407 Avery. Fee \$16 each Session

The ornament of the early Christian, Byzantine, Romanesque and Gothic styles both in architecture and the minor arts; Moslem and Indian ornament; the development of styles, motives and patterns. Periodic drawings.

**[Architecture e35-36—Modern ornament.** Will not be given in 1921-1922; will be given in 1922-1923]

**Architecture e41-42—Decorative arts and interiors.** 1 hour lecture; 1 hour research; drawings and reports (collateral work) Credit V. 2 points each Session. Mr. J. LAUBER

5:10-6 p. m., Monday and Friday. Room 408 Avery. Fee \$16 each Session

The course consists of the treatment of interiors, analysis of the abstract principles of decorative composition, the study of various forms of mural and decorative art, also the processes involved in such arts as painting, sculpture, ceramics, mosaic, stained glass, gesso, plaster, metal and woodwork.

All students who elect the course as a cultural requirement only are expected to furnish periodic reports, but students of the School of Architecture and others taking art courses who have the ability to draw, and desiring University credit are required to furnish drawings or designs at given times on special subjects under consideration.

Class room topics will be followed up where possible by visits to art industrial establishments, ateliers and studios, also where permission can be obtained to notable houses for the study of well designed interiors, thus bringing theory and practice together.

Prerequisites: Open to students who have a sufficient knowledge of drawing and art history, of a standard to be passed upon by the Director of the School or the Instructor, and to students in the University desiring credit who have satisfactorily completed elementary design.

Requirements for B. Arch. degree: 1 hour lecture; 2 hours at Metropolitan Museum (second and fourth Wednesday of each month, 3-5 P. M.).

**Architecture e51—Principles of planning.** Credit V. 2 points Winter Session. Professor WILLIAM A. BORING and Mr. H. W. CORBETT

7-7:50 p. m., Wednesday. Room 407 Avery. Fee \$16

Elements and principles of plan grouping, composition of plans, sites, and surroundings analyzed, and application to problems explained. Characteristic classes of modern buildings studied in detail. Sketches and exercises in plan indication.

**Architecture e52—Principles of composition.** Credit V. 2 points Spring Session. Professor WILLIAM A. BORING and Mr. H. W. CORBETT

7-7:50 p. m., Wednesday. Fee \$16

Elements analyzed and described. Composition of elevations and sections, typical motives and specific types of buildings, with regard to expression, mass, profile, proportion, voids and solids, texture and color.

**Architecture e71—Drawing, pencil.** Credit V. 2 points Winter Session. Professor C. A. HARRIMAN and Mr. H. G. MARCEAU

8-9:40 p. m., Monday and Thursday. Room 504 Avery. Fee \$16

Outline drawing from the flat, from casts, isometric and pencil shading.

**Architecture e72—Drawing, charcoal.** Credit V. 2 points Spring Session. Professor C. A. HARRIMAN

8-9:40 p. m., Monday and Thursday. Fee \$16

From flat, casts, architectural details, ornament.

Prerequisites: Architecture e71 or equivalent.



**Architecture e73—Drawing, water color.** Credit V. 2 points Winter Session. Mr. J. LAUBER

1:10-4:30 p. m., Saturday. Room 505 Avery. Fee \$16

For architects, architectural draftsmen and students in allied arts. Outdoor work will be given when the weather permits.

Prerequisites: Architecture e71, e72 or equivalent.

Will not be given for less than ten students.

**Architecture e74—Drawing, pen and ink.** Credit V. 2 points Spring Session. Professor C. A. HARRIMAN

8-9:40 p. m., Monday and Thursday. Fee \$16

Pen and ink rendering from examples to acquire technique. Free renderings from photographs, objects and architectural problems.

Prerequisites: Architecture e71, e72, or equivalent.

**Architecture e75—Drawing, charcoal and life.** Credit V. 2 points Winter Session. Mr. J. LAUBER

8-9:40 p. m., Monday and Friday. Room 502 Avery. Fee \$16

A foundation for drawing from life by careful studies from the antique figure. As soon as the student has acquired the necessary ability, he will be permitted to take the work from the living model.

Prerequisites: Architecture e71, e72, e73 and e74 or equivalent. Not limited to architectural students.

**Architecture e76-77—Life drawing and composition.** Credit V. 2 points each Session. Mr. J. LAUBER

8-9:40 p. m., Monday and Friday. Room 701 Avery. Fee \$16 each Session

Study from the nude figure is considered an essential, not only for the student of painting, but for the architect, modeler, and designer as well.

Prerequisites: Architecture e71, e72, e73, e74 and e75, or equivalent.

Will not be given for less than ten students. Not limited to architectural students.

**Architecture e80—Drawing, pencil.** Credit V. 2 points Spring Session. Professor C. A. HARRIMAN and Mr. H. G. MARCEAU

8-9:40 p. m., Monday and Thursday. Fee \$16

Architecture e71 repeated in Spring Session.

**Architecture e81—Drawing, water color, advanced.** Credit V. 2 points Winter Session. Mr. J. LAUBER

1:10-4:30 p. m., Saturday. Room 505 Avery. Fee \$16

For architects, architectural draftsmen and students in allied arts. Outdoor work will be given as soon as weather permits.

Prerequisites: Architecture e71, e72 and e73 or equivalent.

Will not be given for less than ten students.

**Architecture e82—Modeling.** Credit V. 2 points Spring Session. Mr. J. C. GREGORY

2-5:20 p. m., Saturday. Fee \$16

The purpose of this course is to train the student in the perception of form in the round, and to acquaint him with the technique of modeling.

Will not be given for less than ten students.



## ARCHITECTURAL DESIGN

The courses in architectural design are conducted on the basis of a progressive series of problems and sketches. These are assigned in the form of programs issued at stated intervals. The work of the students, delivered at a designated time, is passed upon by a jury of architects by the Beaux-Arts Institute of Design. A registration fee of two dollars is required by the Institute, and this must be paid to the Chairman of the Committee on Education, 126 East 75th Street, New York City. More detailed information on this head will be found in a special folder to be obtained in Room 405 Avery Hall.

Students registered for courses in Design may work in the University Extension Atelier, Room 202 Avery Hall, from 7 a. m. to 11 p. m. If room is locked apply to person in charge of elevator.

**Tuition Fees for Design.** The tuition fee in design, regardless of course, is \$32 per Session.

*Tuition fees are under no conditions returnable even though the full Session's work is not taken.*

Students are advanced in accordance with the regulations of the Beaux-Arts Institute of Design on the basis of values obtained. For detailed information obtain Beaux-Arts Announcement issued at Room 405 Avery Hall or at Beaux-Arts Society, 126 East 75th Street.

NOTE. The full fee covers registration for regular problems of the Beaux-Arts Society. No additional fee is required for ten-hour sketches or for archæology or measured drawing problems. Upon *previous application* to Mr. H. V. Walsh or Miss L. Van der Smitten, Room 405 Avery Hall, qualified students may also be admitted without additional fee to other problem competitions conducted by the School of Architecture.

These problems receive no credit toward the total number of units required unless submitted by the student to the Beaux-Arts Society and units granted therefor by that Society.

Sketches and problems will be accepted only after tuition fees have been paid as indicated above.

**Prerequisites for all courses:** Work in the elements of design and shades and shadows, corresponding respectively to Architecture e1, e2, e5 and e6, or their equivalents, such equivalents to be determined **before registration!**

**Architecture e61—Elementary design.** Credit V.\* 20 hours. Professor WILLIAM A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT and A. E. FLANAGAN  
Fee, see above

Major and minor problems corresponding to the Class B Analytique Problems and Esquisse-Esquisse of the Beaux-Arts Institute of Design.

**Architecture e62—Intermediate design.** Credit V.\* 20 hours. Professor WILLIAM A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT and A. E. FLANAGAN  
Fee, see above

Major and minor problems corresponding to the Class B Problems (Projets) and Esquisse-Esquisse of the Beaux-Arts Institute of Design.

\*Students desiring credit in the School of Architecture must submit drawings done in University Extension up to the time of the application for transference of credit and bearing the attestation of the instructor in charge. Requests for such transference of credit should be made to Mr. H. V. Walsh, or Miss L. Van der Smitten, School of Architecture. The difference in tuition fees must be paid.

**Architecture e62a—Elementary design.** Credit V.\* 20 hours. Professor WILLIAM A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT and A. E. FLANAGAN  
 Fee, see above

Major and minor problems corresponding to the Class B Analytique Problems and Esquisse-Esquisse of the Beaux-Arts Institute of Design.

Equivalent to e61, and taken only by students beginning design in the Spring Session.

**Architecture e63—Intermediate design.** Credit V.\* 20 hours. Professor WILLIAM A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT and A. E. FLANAGAN  
 Fee, see above

Major and minor problems corresponding to the Class B Problems (Projets) and Esquisse-Esquisse of the Beaux-Arts Institute of Design.

**Architecture e64—Advanced design.** Credit V.\* 20 hours. Professor WILLIAM A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT and A. E. FLANAGAN  
 Fee, see above

Major and minor problems corresponding to the Class A Problems (Projets) and Esquisse-Esquisse of the Beaux-Arts Institute of Design.

**Architecture e65—Advanced design.** Credit V.\* 20 hours. Professor WILLIAM A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT and A. E. FLANAGAN  
 Fee, see above

Major and minor problems corresponding to the Class A Problems (Projets) and Esquisse-Esquisse of the Beaux-Arts Institute of Design.

**Architecture e66—Advanced design.** Credit V.\* 20 hours. Professor WILLIAM A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT and A. E. FLANAGAN  
 Fee, see above

Major and minor problems corresponding to the Class A Problems (Projets) and Esquisse-Esquisse of the Beaux-Arts Institute of Design.

**Architecture e67 or 68—Thesis.** Credit V. 4 points Winter or Spring Session. Professor WILLIAM A. BORING, Messrs. M. PRÉVOT, H. W. CORBETT and A. E. FLANAGAN

Fee \$32 either Session

An important final problem in design. Individual instructions will be issued to those qualified.

**Architecture e69-70—City planning and civic art.** Mr. GEORGE HERBERT GRAY

5:10-6 p. m., Lecture, 8 p. m., criticism, Wednesday, Room 403 Avery. Field work, week ends

Fee \$50 each Session. Not charged at \$8 per point. No University fee

The purpose of this course is to train men in a comprehensive knowledge of the general subject of City Planning and the special subject of Civic Art.

Prerequisites: A general schooling equivalent to two years collegiate work in a recognized college and sufficient training in design in a school of architecture or landscape architecture equal to three years' work.

**Armenian (See Slavonic, pp. 122, 123)**

\*Students desiring credit in the School of Architecture must submit drawings done in University Extension up to the time of the application for transference of credit and bearing the attestation of the instructor in charge. Requests for such transference of credit should be made to Mr. H. V. Walsh, or Miss L. Van der Smitten, School of Architecture. The difference in tuition fees must be paid.

## ASTRONOMY

**Astronomy e1—Introduction to the science.** Credit I, IV. 2 points Winter Session. Dr. C. S. BRAININ

7:10–9 p. m., Friday. Wilde Observatory. Fee \$16

This course consists of a non-mathematical explanation of the simpler phenomena under everyday observation in the heavens. Among the topics considered are: The constellations and aids to the naked-eye recognition of the stars; the subjects of time and navigation; the earth and moon, their relation to each other and to the solar system and the universe; the sun, its spots and prominences; the planets, individually and as members of the solar system; the question of their habitability; eclipses, comets, and meteors; the stars, their motions and compositions; the nebulae and their relation to cosmic hypotheses.

Frequent use will be made of the equatorial telescope and other instruments of the observatory as well as of the Department's large collection of lantern slides.

Text-book: Jacoby's *Astronomy*.

**Astronomy e2—Introduction to the science.** Credit I, IV. 2 points Spring Session. Dr. C. S. BRAININ

7:10–9 p. m., Friday. Fee \$16

Astronomy e1 repeated in the Spring Session.

**Astronomy e3—Navigation and piloting.** 2 points Winter Session. Captain D. POLOWE

7:10–9 p. m., Wednesday. Room 510 Fayerweather. Fee \$16

This course is especially designed to meet the examination requirements of the United States Steamboat Inspection Service as specified in Ocean and Coastwise General Rules and Regulations (Rule V, Sections 29 and 33), which read as follows:

"Any person who has attained the age of nineteen years and who has graduated from a regularly established high school or college may, upon the recommendation of the master or masters under whom he has served, be examined for third mate of ocean or coastwise steamers after having served not less than twelve months (as junior officer) in the deck department of ocean or coastwise steamers of 2,000 gross tons or over." (Sec. 4440, R. S.)

The Department of Astronomy will endeavor to secure junior officers' berths for those students who successfully complete the course and who are desirous of going to sea.

Text-book: Jacoby's *Navigation*.

**Astronomy e4—Navigation and piloting.** 2 points Spring Session. Captain D. POLOWE

7:10–9 p. m., Wednesday. Fee \$16

Astronomy e3 repeated in the Spring Session.

**Biology (See pp. 134, 135)**

**Bohemian (See Czech, pp. 121, 122)**

## BOOKKEEPING

**Bookkeeping e1—Secretarial bookkeeping.** 4 points Winter Session. Fee \$32. Mr. C. C. HUGHES.

Section 1—4:30–6:10 p. m., Monday and Friday. Room 302 Mines

Section 2—4:30–6:10 p. m., Wednesday; 9–10:40 a. m., Saturday. Room 511  
Journalism

No knowledge of bookkeeping is required. The purpose of the course is to prepare students to keep the books of the professional man, and also to interpret the accounts of a modern business. From the study of a few simple accounts the work will proceed to a drill in double entry as applied to a trading concern. Some of the special features of the course will include the preparation of various business forms, statements, and reports; construction of family



budgets and household accounts; club and society accounts; lawyers' accounts; physicians' accounts; the private ledger and its relation to the general ledger; controlling accounts; the bank account and bank reconcilements; general classification of accounts.

Complete in one Session.

**Bookkeeping e2—Secretarial bookkeeping.** 4 points Spring Session. Fee \$32. Mr. C. C. HUGHES

Section 1—4:30–6:10 p. m., Monday and Friday

Section 2—4:30–6:10 p. m., Wednesday; 9–10:40 a. m., Saturday

This course is the same as Bookkeeping e1 given in the Spring Session.

## BOTANY

(See also Zoology, p. 132)

**Botany e1—Nature and development of plants.** Lectures and laboratory. Credit I, IV. 4 points Winter Session. Fee \$32. Professor C. C. CURTIS

4:30–5:30 p. m., Monday and Thursday (lectures). Room 505 Schermerhorn;

5:30–7 p. m., Monday and Thursday (laboratory). Room 502 Schermerhorn

An introductory course dealing with the organization and function of plants.

**Botany e2—Evolution and utilization of plants.** Credit I, IV. 4 points Spring Session. Fee \$32. Professor C. C. CURTIS

4:30–5:30 p. m., Monday and Thursday (lectures). 5:30–7 p. m., Monday and Thursday (laboratory)

This course traces the development of plant life from the simplest forms on the earth to the most advanced types, and also considers the geographical distribution and utilization of the more important groups.

Either of these courses is recommended for pre-medical students to supplement Zoology e9–10; the two courses constitute one year of biology required by law for students intending to study medicine.

## BUSINESS

For a course on Latin America, see History e177, e178, p. 91; Vocational and industrial psychology, see Psychology e145, e146a, pp. 108, 109; Spanish-American civil law, see Law eX4, p. 96; Governmental regulation of commerce and industry, see Government e114, p. 83; Civil service, see Government e128, p. 84.

### *Undergraduate Courses*

**Business e7–8—Business organization and administration.** 2 points each Session. Fee \$16 each Session. Drs. H. S. PERSON, P. F. BRISSENDEN, Messrs. G. FILIPETTI, A. H. STOCKER and G. M. STEPHENS

Section 1—4:30–6:10 p. m., Thursday. Room 507 Journalism

Section 1 is open only to candidates for the secretarial certificate.

Section 2—4:30–6:10 p. m., Thursday. Room 512 Journalism

Section 3—4:30–6:10 p. m., Thursday. Room 611 Journalism (offered during the Winter Session only)

Section 4—7:40–9:30 p. m., Monday. Room 602 Hamilton

Section 5—7:40–9:30 p. m., Monday. Room 502 Hamilton



Section 6—7:40-9:30 p. m., Monday. Room 607 Hamilton

Section 7—7:40-9:30 p. m., Tuesday. Room 617 Hamilton

Section 8—7:40-9:30 p. m., Tuesday. Room 502 Hamilton

Section 9—7:40-9:30 p. m., Tuesday. Room 512 Journalism

Section 9 is assigned to those students especially interested in Scientific Management, and will be conducted by Dr. Person.

Section 10—7:40-9:30 p. m., Wednesday. Room 602 Hamilton

Section 11—7:40-9:30 p. m., Wednesday. Room 603 Hamilton

Section 12—7:40-9:30 p. m., Thursday. Room 603 Hamilton

A brief survey of the development of business enterprise. A comparison of the individual proprietorship, the partnership, and the corporation. The structure and organization of corporations; where to incorporate; the charter; organization meetings; selection of officers; proxies; voting trusts; standing committees, etc. General principles of business organization and administration. Factors influencing location and construction of plants. Purchasing and receiving; stores and perpetual inventories. Problems of employment and welfare work. Production routine; special wage systems; 'scientific' management and 'efficiency' movement; marketing and sales organization; advertising; credits and collections; traffic; office organizations; graphic records, etc.

The course is designed as a general survey of modern business procedure.

**Business e7a-8a—Business organization and administration.** 2 points each Session. Fee \$16 each Session. Messrs. G. M. STEPHENS and A. H. STOCKDER

Section 1—4:30-6:10 p. m., Thursday. Room 612 Journalism

Section 2—7:40-9:30 p. m., Tuesday. Room 616 Hamilton

The subject matter is the same as in Business e7-8, but the course begins in the Spring Session.

**Business e9—Problems of retail merchandising.** Credit IX. 2 points Winter Session. Mr. J. B. SWINNEY

7:40-9:30 p. m., Thursday. Room 602 Hamilton. Fee \$16

This course is intended to outline the chief current problems, the difficulties involved in their solution, the various plans being tried and the progress being obtained. It will consist of lectures together with assigned readings in trade papers and reports. Frequently prominent retailers interested in the various problems will take part in the discussions.

The topics will consist of such as the following: standardization of nomenclature in retailing; can modern industrial organization be applied to retail trading concerns; efficient store layout; the place of planning in merchandising; the determination of proper price lines; the balancing of mark-up, turn-over and volume; wage-systems; allocation and proration of overhead; should there be a sales manager; research in retail merchandising.

**Business e11-12—Economic geography.** 2 points each Session. Fee \$16 each Session. Messrs. J. E. ORCHARD, C. MCCARROLL and G. J. RANSON

Section 1—2:45-4:25 p. m., Wednesday. Room 402 Journalism

Section 2—4:30-6:10 p. m., Monday. Room 507 Journalism

Section 3—7:40-9:30 p. m., Monday. Room 516 Hamilton

An introductory but non-technical course designed as part of a liberal education. Lays the foundation for further study of economic geography; explains some environmental factors that influence man's economic and social development.

**Business e13—Advertising display and mechanics.** 2 points Winter Session. Mr. W. P. LANGREICH

7:40-9:30 p. m., Monday. Room 507 Journalism. Fee \$16

A practice course in advertising layouts supplemented by lectures on the attention value of display arrangement as applied to advertising. It deals principally with the methods of reflect-

ing an advertising idea pictorially and adjusting it to the nature of the goods advertised and the mechanical methods employed by the artist, engraver and printer in order to carry out the display idea. Students are given assignments to enable them to link together the sales, advertising and merchandise value of the advertisement.

This is not a copy-writing course, but is given in conjunction with such courses.

**Business e13b—Elementary design applied to business art.** 2 points  
Winter Session. Mr. R. E. O'NEILL

7:40-9:30 p. m., Friday. Room 404 Engineering. Fee \$16

Essentials of design are presented, the student being familiarized with the variety of their appearances in art. Simple motifs will be developed in practice, after which their application to business art will be treated.

**Business e13c—Business art.** 2 points Winter Session. Mr. R. E. O'NEILL

7:40-9:30 p. m., Thursday. Room 402 Engineering. Fee \$16

Problems arising in application of design principles to forms of advertising are considered. This involves the study and practice of various treatments of illustrative material, borders types, etc.

The different mediums are studied in regard to their respective uses and characteristics.

Prerequisites: Drawing eW2 and Business e14c.

**Business e14—Advertising display.** 2 points Spring Session. Mr. W. P. LANGREICH

7:40-9:30 p. m., Monday. Fee \$16

A practice course in advertising lay-outs (continuation of Business e13) paying special attention to the display work in advertising campaigns. Students are required to be prepared with materials to make lay-outs in class.

**Business e14a—Advertising display.** 2 points Spring Session. Mr. W. P. LANGREICH

7:40-9:30 p. m., Thursday. Fee \$16

Business e13 repeated in the Spring Session. A beginning course.

**Business e14b—Business art.** 2 points Spring Session. Mr. R. E. O'NEILL

7:40-9:30 p. m., Thursday. Fee \$16

Business e13c repeated in the Spring Session.

Prerequisites: Drawing eW1 and Business e13b.

**Business e14c—Elementary design applied to business art.** 2 points  
Spring Session. Mr. R. E. O'NEILL

7:40-9:30 p. m., Friday. Fee \$16

Business e13b repeated in the Spring Session.

**Business e15—Practical advertising writing.** 2 points Winter Session.  
Mr. W. SHAW-THOMSON

7:40-9:30 p. m., Tuesday. Room 306 Mines. Fee \$16

This course deals with the theory, technique and practice of advertising from the point of view of the planner and writer of advertising copy. A part of the work consists in the study of merchandise as advertising subject matter. The course consists of lectures supplemented by weekly practice assignments in the writing of copy.

**Business e15a—Advanced advertising writing.** 2 points Winter Session.  
Mr. W. SHAW-THOMSON

5:50-7:30 p. m., Tuesday. Room 502 Hamilton. Fee \$16

Identical with Business e16, but offered in the Winter Session.

**Business e16—Advanced advertising writing.** 2 points Spring Session.  
Mr. W. SHAW-THOMSON  
7:40–9:30 p. m., Tuesday. Fee \$16

Advertising viewed as a factor in building business for a prescribed commodity. The course deals primarily with details of campaigns, plans, costs, methods, media and problems in circulation.

This course is a continuation of Business e15.

Prerequisite: Business e15 or equivalent.

**Business e16a—Practical advertising writing.** 2 points Spring Session.  
Mr. W. SHAW-THOMSON  
5:50–7:30 p. m., Tuesday. Fee \$16

Identical with Business e15, but offered in the Spring Session.

**Business e17—Salesmanship.** 2 points Winter Session. Mr. C. V. DAVENPORT  
7:40–9:30 p. m., Thursday. Room 515 Kent. Fee \$16

Selling and the essentials of salesmanship are considered in this course. The student is given a grounding in the principles of selling and practice in the presentation of a selling proposition from its inception in the customer's mind, throughout its development and final consummation as a sale.

The distinct forms of sales are illustrated with typical problems in selling at retail, wholesale, and the marketing of specialties.

**Business e18a—Salesmanship.** 2 points Spring Session. Mr. C. V. DAVENPORT  
7:40–9:30 p. m., Thursday. Fee \$16

Business e17 repeated in the Spring Session.

**Business e19–20—Sales promotion.** 3 points each Session. Mr. J. U. REBER  
7:40–9:30 p. m., Friday. Room 507 Journalism. Fee \$24 each Session

This course covers the practical every-day problems of a sales manager. It includes a thorough study of merchandising, direction of a sales force, methods of breaking down sales resistance and the use of advertising in selling. Instruction in the formulation of advertising material is limited to that which goes directly to the trade, dealer helps and bulletins to the sales force. Consumer advertising is considered only in its secondary aspect as a force in selling the trade.

**Business e21–22—Principles of advertising.** Credit IX. 2 points each Session. Fee \$16 each Session. Mr. A. PACE  
Section 1—4:30–6:10 p. m., Tuesday. Room 616 Hamilton  
Section 2—7:40–9:30 p. m., Friday. Room 516 Hamilton

A basic course in the functions, theory, principles and applications of advertising, designed to show what advertising is, what functions it economically can perform, the principles which underlie its application to the different fields of business, its relationship to production, distribution, selling, etc., the standards of advertising practice, advertising formulæ, and the organization and management of an advertising department.

This course is designed to provide a general grasp of advertising for the business executive as well as the foundation for the advertising specialist.



**Business e22a—Principles of advertising.** Credit IX. 2 points Spring Session. Mr. A. PACE

4:30-6:10 p. m., Friday. Fee \$16

Business e21 repeated in the Spring Session. A course for beginners.

**Business e23-24—First year accounting.** 2 points each Session. Fee \$16 each Session. Messrs. J. W. ABNEY, F. P. BALTZ, E. M. BARBER, R. T. GREENE, JR., J. T. HORNER, H. A. INGRAM, C. L. MARVIN, E. L. OUTWIN, A. RUSSMAN, F. W. SCHOLZ and E. W. STANTON

Section 1—5:50-7:30 p. m., Monday. Room 402 Journalism

Section 2—5:50-7:30 p. m., Monday. Room 713 Journalism

Section 3—7:40-9:30 p. m., Monday. Room 511 Journalism

Section 4—7:40-9:30 p. m., Monday. Room 713 Journalism

Section 5—2:10-4 p. m., Tuesday. Room 402 Journalism

(This section may be taken for credit by students in Columbia College and the School of Business)

Section 6—4:30-6:10 p. m., Tuesday. Room 511 Journalism

Section 7—5:50-7:30 p. m., Tuesday. Room 712 Journalism

Section 8—7:40-9:30 p. m., Tuesday. Room 511 Journalism

Section 9—7:40-9:30 p. m., Tuesday. Room 712 Journalism

Section 10—5:50-7:30 p. m., Wednesday. Room 712 Journalism

Section 11—7:40-9:30 p. m., Wednesday. Room 712 Journalism

Section 12—5:50-7:30 p. m., Thursday. Room 713 Journalism

Section 13—7:40-9:30 p. m., Thursday. Room 511 Journalism

Section 14—7:40-9:30 p. m., Friday. Room 511 Journalism

This course develops the subject rapidly devoting its time and emphasis to the foundational problems of accounting. It is built up along the lines and methods of modern accounting practice. The subject matter includes: theories of debit and credit; classification of accounts; underlying principles of the various accounting records; business papers and documents used as the basis for first entry; simpler problems of the balance sheet and income statement; single entry; controlling accounts; handling sales and purchases; safeguarding the cash; consignments; and related topics.

Ample practice for students is provided.

It is prerequisite to all the other courses in accounting.

Text-book: Kester's *Accounting Theory and Practice* (Vol. I with supplies).

(See statement concerning semester examinations, page 7.)

**Business e23a—First year accounting.** 2 points Winter Session. Fee \$16. Messrs. E. M. BARBER, C. C. HUGHES and J. O. OSGOOD

Section 1—7:40-9:30 p. m., Tuesday. Room 402 Journalism

Section 2—5:50-7:30 p. m., Wednesday. Room 713 Journalism

Section 3—5:50-7:30 p. m., Thursday. Room 402 Journalism

Identical with Business e24, but offered in the Winter Session for the benefit of those who have had Business e23.

(See statement concerning semester examinations, page 7.)

**Business e24a—First year accounting.** 2 points Spring Session. Fee \$16. Messrs. E. M. BARBER, C. C. HUGHES, J. O. OSGOOD, F. W. SCHOLZ and E. W. STANTON

Section 1—5:50-7:30 p. m., Monday

Section 2—7:40-9:30 p. m., Monday



- Section 3—7:40-9:30 p. m., Tuesday  
 Section 4—5:50-7:30 p. m., Wednesday  
 Section 5—5:50-7:30 p. m., Thursday  
 Section 6—7:40-9:30 p. m., Friday

Identical with Business e23, but offered in the Spring Session for those beginning the study of accounting.

(See statement concerning semester examinations, page 7.)

**Business e25-26—Second year accounting.** 2 points each Session. Fee \$16 each Session. Messrs. W. B. COKELL, J. T. HORNER, S. B. KOOPMAN, T. L. WOOLHOUSE and Miss NINA R. MILLER

- Section 1—5:50-7:30 p. m., Monday. Room 712 Journalism  
 Section 2—7:40-9:30 p. m., Monday. Room 712 Journalism  
 Section 3—7:40-9:30 p. m., Monday. Room 402 Journalism  
 Section 4—7:40-9:30 p. m., Tuesday. Room 713 Journalism  
 Section 5—5:50-7:30 p. m., Wednesday. Room 402 Journalism  
 Section 6—7:40-9:30 p. m., Thursday. Room 402 Journalism

A thorough study of the corporation and its related problems is the chief aim of the first half of the course. Some of the topics covered are: records and accounts peculiar to a corporation; elements of manufacturing accounts; perpetual inventory; voucher system and payroll methods; theories of the balance sheet; its make-up, form and arrangement; valuation of assets in the balance sheet; depreciation; showing of liabilities; valuation of capital stock; profits; dividends; reserves and surplus; sinking and other funds; income summary and problems connected therewith; liquidation of a corporation; consolidations and mergers; branch house accounting; fire loss adjustments; hypothecation of accounts receivable, etc.

Practice work for the Winter Session will consist of data in corporation manufacturing accounting for record in blanks and of correlated problems.

The work of the Spring Session will consist of carefully classified and graded problems, supplemented by lectures and demonstrations.

Prerequisite: Business e23-24.

(See statement concerning semester examinations, page 7.)

**Business e25a—Second year accounting.** Credit IX. 2 points Winter Session. Mr. J. T. HORNER

7:40-9:30 p. m., Wednesday. Room 713 Journalism. Fee \$16

Identical with Business e26, but offered in the Winter Session.

Prerequisite: Business e25.

(See statement concerning semester examinations, page 7.)

**Business e26a—Second year accounting.** Credit IX. 2 points Spring Session. Fee \$16. Mr. J. T. HORNER

Section 1—5:50-7:30 p. m., Thursday

Section 2—7:40-9:30 p. m., Friday.

Identical with Business e25, but offered in the Spring Session.

Prerequisite: Business e23-24.

(See statement concerning semester examinations, page 7.)

**Business e27-28—Cost accounting.** 2 points each Session. Fee \$16 each Session. Messrs. L. F. BRUMM, W. S. GEE and D. ROSS

Section 1—7:40-9:30 p. m., Monday. Room 302 Mines

Section 2—5:50-7:30 p. m., Tuesday. Room 402 Journalism

Section 3—7:40-9:30 p. m., Wednesday. Room 511 Journalism

Section 4—5:50-7:30 p. m., Thursday. Room 712 Journalism

Section 5—7:40-9:30 p. m., Friday. Room 713 Journalism

The work of the Winter Session will consist of: Elements of costs; principles and general methods of cost finding; direct and indirect costs; direct and indirect expenses; wage systems; recording material and labor costs; compiling the cost data; control of cost records by financial books.

The work of the Spring Session will consist of: Examination of plants; devising of cost systems; estimating of cost systems; departmental cost systems; special order systems according to productive labor and machine cost plans; productive systems according to productive labor and machine cost plans.

Should be taken as a parallel course with Business e25-26.

Prerequisite: Business e23-24.

**For other courses in accounting, see pp. 47, 49**

**Business e31-32—Principles of personnel management.** Credit IX.  
2 points each Session. Mr. L. OUTHWAITE

2:10-4 p. m., Tuesday. Room 410 Mines. Fee \$16 each Session

This course is intended for persons expecting to enter the field of business management. It is designed to furnish them with a knowledge of the best practices and with standards for judging personnel departments and personnel executives, as well as with an understanding of the business executive's responsibility in personnel.

Winter Session. The place of personnel administration in business organization; organization and functions of typical personnel departments; the analysis of jobs and writing of personnel specifications; the use of exact methods in selection and placement (intelligence and trade tests, rating methods, physical examination); training methods including manuals of operation; transfer, promotion and discharge.

Spring Session. Wages and payment methods; employee representation and labor organization; research problems in personnel work (calculation of labor turnover, the labor audit); relation of personnel department to the other departments of management; relation of personnel department to the community.

NOTE. Students receiving credit for this course will not receive credit for Business e161-162.

**Business e35—Business methods in foreign trade: selling in foreign markets.** Lectures, text, reports and discussion. 2 points Winter Session.  
Dr. E. E. PRATT

7:40-9:30 p. m., Friday. Room 616 Hamilton. Fee \$16

The market; methods of locating a market; study of the market; machinery for export—export commission house, export merchant, manufacturers' export agent; direct sales by large scale organizations; the functions, organization and operation as affected by line, market and inside affairs; Webb Law Associations; selling through salesmen and agents; agency contracts; correspondence; catalogs; advertising; credit terms; transportation merchant marine; communications; banking and Edge corporations; insurance; investments in foreign countries; and various factors in building foreign markets.

**Business e36—Business methods in foreign trade: the technique of documents, paper work and shipping.** Lectures, text, reports, discussion, practice work. 2 points Spring Session. Dr. E. E. PRATT

7:40-9:30 p. m., Friday. Fee \$16

Study of and practice with the documents and forms used in export trade; study of related export problems; detailed study of the inquiry, analysis of quotation and the export order; specifications as to quantity and quality; price policy; the purchase order; packing and marking; inland traffic problems; port problems; shipping procedure and organization; ocean freight rates, freight contracts, bills of lading, shippers' export declaration, insurance certificate, consular invoice, financial documents, etc.; terms of sale, terms of payment and delivery; function of the freight forwarder, insurance broker, banker.

**Business e37-38—The marketing of manufactured products.** Credit IX. 2 points each Session. Professor R. M. HAIG

7:40-9:30 p. m., Tuesday. Room 603 Hamilton. Fee \$16 each Session

A treatment of the problems of sales management involved in the distribution of manufactured products, including a consideration of such topics as market analysis, marketing organizations and methods, the function of advertising, private brands, price problems, price maintenance, etc.

Prerequisite: Business 7-8 (required only of those students desiring credit toward a degree).

**Business e39—Agricultural cooperation.** Credit IV, IX. 2 points Winter Session. Professor A. HOBSON

3:10-4 p. m., Monday and Wednesday. Room 619 Schermerhorn. Fee \$16

The course is an analysis of the economic functions and services performed by farmers' cooperative organizations, together with the problems of organizing and financing farmers' cooperative companies. The development, extent, and present status in this country and abroad will receive consideration.

**Business e40—Consumers cooperation.\*** Credit IV, IX. 2 points Spring Session. Professor A. HOBSON

3:10-4 p. m., Monday and Wednesday. Fee \$16

This course deals with the economic principles involved in cooperative action among consumers. It will also take up the development, extent and present status of the cooperative movement among consumers in the United States and in foreign countries.

**Business e41-42—Farm management.** Readings, conferences, reports and excursions. Credit I, IV, IX. 3 points each Session. Professor O. S. MORGAN  
4 p. m., Wednesday, or by appointment. Room 511 Schermerhorn. Fee \$24 each Session

The course is an introduction to agricultural economics. The Winter Session gives a thorough review of the chief problems in American farm management. Topics of study: cropping plans, farm layout, types of farming, intensive vs. extensive, apportionment of capital in farming, stock, machinery, buildings, individual farm projects, farm accounts. The Spring Session deals with the chief features of agricultural economics.

NOTE. Where practicable, students registering for this course should take Agriculture e1-2 or e11 and e16 and Business e43-44.

**Business e43-44—Economics of food marketing.** Credit IV, IX. 2 points each Session. Professor A. HOBSON

2:10-3 p. m., Monday and Wednesday. Room 619 Schermerhorn. Fee \$16 each Session

This course deals with the fundamental principles involved in the field of market distribution. Special emphasis will be given to the marketing of food products. The work discusses the marketing processes encountered by those products in their journey from the farmer to the consumer. Attention is given to such topics as: grades and standards, storage, transportation, the middleman's services, charges, future trading, price making forces, cooperative organization, parcel post and express methods, and municipal markets. Some of the more important of the many proposed marketing reforms will also be discussed.

**Business e45—Corporation finance.** 2 points Winter Session. Fee \$16. Professors H. LYON and J. C. BONBRIGHT

\*For a short course on City Marketing Problems see Agriculture eXd, page 24.



Section 1—7:40-9:30 p. m., Monday. Room 306 Mines

Section 2—7:40-9:30 p. m., Thursday. Room 306 Mines

This course will follow the syllabus of the Investment Bankers Association and will present the variations of risk and income and control a corporation effects through the issuance of its securities; principles governing the issuance and proportions of classes of securities of a corporation, or the plan of capitalization, financial situations which lead to the issuance of particular forms of securities, the organization of subsidiaries, assumed bonds and guaranteed securities; leases; securities issued for mergers, combinations and consolidations; amortization of debt; the preparation of securities with relation to the market.

**Business e46—Corporation finance.** 2 points Spring Session. Fee \$16.

Professors H. LYON and J. C. BONBRIGHT

Section 1—7:40-9:30 p. m., Monday

Section 2—7:40-9:30 p. m., Thursday

This course will follow the syllabus of the Investment Bankers Association with the addition of a brief discussion of the mechanism of the stock exchange. Though the student should preferably take Business e45 before taking this course, he may, by doing some extra reading, take this course without having had Business e45. The course will discuss the finding of funds for the capital account; financing through an appeal to the stockholders and stockholders' rights; work and methods of the banking houses in financing corporations and inducing capitalists to commit funds to the enterprise; making a 'market'; syndicate transactions, joint accounts and underwritings; management of incomes; financing of receiverships, readjustments of the capital account and reorganizations. Stock exchange transactions.

**Business e47—Investment finance.** Credit IX. 2 points Winter Session.

Dr. F. A. DEWEY

7:40-9:30 p. m., Tuesday. Room 709 Hamilton. Fee \$16

It is the purpose of this course and Business e48 to cover the field of investment in a broad, general way and be helpful in indicating means and methods of investing. This course includes a discussion of speculation and investment; the mechanism, types, and tests of investment; public and private securities; investment markets; government and municipal bonds, mortgages.

**Business e48—Investment finance.** Credit IX. 2 points Spring Session.

Dr. F. A. DEWEY

7:40-9:30 p. m., Tuesday. Fee \$16

Corporation securities with enough of the mechanism of corporation finance for investment analysis, mortgage bonds, collateral securities and debentures; investment institutions; general investment principles, distribution of risk, etc.; the mechanism of the stock exchange and methods of buying and selling securities on the exchange.

**Business e49—Principles of investment.** Credit IX. 2 points Winter Session. Miss HELEN HARRINGTON

7:40-9:30 p. m., Tuesday. Room 609 Hamilton. Fee \$16

This course deals with the fundamental principles of investment, and is intended particularly for women investors and for women who have entered or who are preparing to enter the field of business.

It includes a discussion of investment terms and of the different classes of investments, with their relative merits; the effect of income tax requirements on the yearly return from different classes of securities; the care and handling of securities; the necessity of changing investments to meet varying conditions; the proper time to buy and to sell.



† **Business e51—Principles of money and banking.** 3 points Winter Session. Fee \$24. Messrs. H. BECKHART and J. M. CHAPMAN  
 Section 1—5:50-7:30 p. m., Thursday. Room 511 Journalism  
 Section 2—7:40-9:30 p. m., Tuesday. Room 702 Hamilton

An introductory course presenting the theory and history of money and outlining the contemporary status of the chief monetary systems; the value of money; bimetallism and kindred systems; price quotations and price measurement; principles of coinage; government paper issue and legal tender; international monetary relationships; the fundamental principles of banking; credit and its relation to money; the relation of the bank to economic life.

† **Business e51a—Elements of banking practice.** 3 points Winter Session.  
 Mr. J. H. RIDDLE  
 5:50-7:30 p. m., Thursday. Room 702 Hamilton. Fee \$24

Business e52 given in the Winter Session for students who have had Business e52a in the Spring Session.

† **Business e52—Elements of banking practice.** 3 points Spring Session.  
 Mr. H. BECKHART  
 7:40-9:30 p. m., Tuesday. Fee \$24

Bank charters and by-laws; outlines of bank organization; duties of bank officers and employees, the organization of departments; collection of items; elements of bank accounting; operation of foreign department; bank examinations; comparative analysis of different types of bank organization.

Prerequisite: Business e51.

† **Business e52a—Principles of money and banking.** 3 points Spring Session. Mr. J. M. CHAPMAN  
 5:50-7:30 p. m., Thursday. Fee \$24

Business e51 repeated in the Spring Session for new students. A beginning course.

**Business e53-54—Income tax procedure.** 2 points each Session. Professor R. M. HAIG  
 7:40-9:30 p. m., Tuesday. Room 612 Journalism. Fee \$16 each Session

A consideration of the technical problems arising from the imposition of the Federal taxes on incomes and excess profits. The problems are approached from the point of view of the tax-payer who desires to determine the exact application of the law to the interests he represents. This course may be entered by one who is not familiar with procedure.

**Business e57-58—Business statistics.** 2 points each Session. Mr. F. W. JONES

7:40-9:30 p. m., Friday. Room 502 Kent. Fee \$16 each Session

This course is designed to afford training in the use of quantitative methods of analysis and research in dealing with economic phenomena, with particular reference to business operations. Methods of statistical analysis are developed, and attention is given to the application of these methods to the study of general business conditions and to the administration of individual business units. Laboratory work involving the utilization of current material constitutes an essential part of the course.

Same as Business 57-58, with less intensive treatment.

**Business e61—Elementary business arithmetic.** 2 points Winter Session.  
 Mr. H. M. SPANDAU  
 7:40-9:30 p. m., Tuesday. Room 507 Journalism. Fee \$16

† **NOTE.** The attention of prospective students who are connected with financial institutions and who are not candidates for the certificate is called to the corresponding courses in money and banking which are offered by the New York Chapter of the American Institute of Banking under the direction of University Extension.

A thorough review of fundamental operations as applied to everyday business transactions, particular attention being given to simple, short, practical methods of calculation. Special topics considered are: Aliquot parts as applied to multiplication, division, percentage and interest; rapid calculations; checking results; fundamental principles of arithmetic as used in the solution of problems; graphs; percentage and its application; bank discount.

**Business e61a—Business mathematics.** 2 points Winter Session. Mr. H. M. SPANDAU

6-7:40 p. m., Tuesday. Room 507 Journalism. Fee \$16

Business e62 repeated in the Winter Session.

**Business e62—Business mathematics.** 2 points Spring Session. Mr. H. M. SPANDAU

7:40-9:30 p. m., Tuesday. Fee \$16

This course presupposes a working knowledge of elementary business arithmetic. It will include such topics as investments, sinking funds, annuities, amortization, stocks, bonds, depreciation, foreign exchange, United States customs, and equation of accounts. The structure and use of calculating tables will be illustrated. Logarithms will be explained and used in making calculations in problems in above mentioned topics.

**Business e62a—Elementary business arithmetic.** 2 points Spring Session. Mr. H. M. SPANDAU

6-7:40 p. m., Tuesday. Fee \$16

Business e61 repeated in the Spring Session. Given if called for.

**Business e65—Railway traffic management.** 2 points Winter Session. Professor T. W. VAN METRE

5:50-7:30 p. m., Wednesday. Room 612 Journalism. Fee \$16

Organization and service of railway and industrial traffic departments; classification; rates; traffic problems, such as demurrage, car service, routing, claims; railroad regulation.

**Business e66a—Railway traffic management.** 2 points Spring Session. Professor T. W. VAN METRE

5:50-7:30 p. m., Wednesday. Fee \$16

Business e65 repeated in the Spring Session for new students.

**Business e67-68—Latin American commercial law.** Credit IX. 2 points each Session. Mr. T. E. ÓBREGON

7:40-9:30 p. m., Thursday. Room 611 Journalism. Fee \$16 each Session

This course aims to afford students a general legal knowledge of ways in which to carry on business in Latin-American countries.

During the Winter Session the course will cover the following topics: Merchants, their rights and obligations; commercial contracts in general; brokers; banking; agents; partnerships; corporations; general principles on contracts. During the Spring Session the following will be discussed: Purchase and sale; negotiable instruments; foreign exchange; transportation overland; insurance; patents; copyrights and trade marks; travelers taxes and licenses, legal procedure. Anglo-American and Spanish-American law will be compared.

**Business e67a-68a—Argentine law.** Credit IX. 2 points each Session. Mr. R. GARCIA-ARIAS

7:40-9:30 p. m., Wednesday. Room 611 Journalism. Fee \$16 each Session

This course deals with (1) a brief historic-economic description of the country; its industrial and financial situation; the relation of the commerce and industries of the United States to the South American countries; a comparative study of commercial systems with special

reference to business transactions; (2) railroads; taxes; psychology of the people; immigration; the banking systems of the country; bankruptcy and business troubles; custom houses and port legislation.

**Business e70—Commercial law for engineering students.** Credit V. 2 points Spring Session. Mr. W. LILLY  
4:30–6:10 p. m., Tuesday. Fee \$16

This course is intended to give the student some knowledge of the ordinary legal aspects of common business transactions and should enable him to gain that comprehension of business which may be had only from an understanding of the legal situations involved. He should derive from it a sense of the occasions when he should consult a lawyer for guidance to avoid making legal mistakes rather than any feeling that he is competent to dispense with legal advice. Though the student will have a text to read, the work of the lecture hour will consist almost entirely of the presentation of business situations (states of fact) and a class discussion of the legal consequences. In this way the course will cover topics of contracts, sales, bailments, negotiable instruments, agency, partnerships, real and personal property, and bankruptcy.

**Business e73—Contracts.** Credit IX. 2 points Winter Session. Professor R. W. GIFFORD  
7:40–9:30 p. m., Thursday. Room 411 Kent. Fee \$16

This course aims to introduce the beginner to the study of the law of contracts. It deals chiefly with mutual assent and the formal requisites of contracts, such as the Statutes of Frauds. The subject is taught through actual business cases which have arisen in the courts. Text-book to be announced.

**Business e73a—Contracts.** Credit IX. 2 points Winter Session. Professor W. W. COOK

7:40–9:30 p. m., Thursday. Room 615 Kent. Fee \$16

Identical in scope with Business e74, but given in the Winter Session.

Prerequisite: Business e73 or Business e74a.

Text-book to be announced.

**Business e74—Contracts.** Credit IX. 2 points Spring Session. Professor R. W. GIFFORD

7:40–9:30 p. m., Thursday. Fee \$16

A continuation of Business e73. This course deals with consideration, the construction of contracts, and conditions of contracts.

Text-book to be announced.

**Business e74a—Contracts.** Credit IX. 2 points Spring Session. Professor W. W. COOK

7:40–9:30 p. m., Thursday. Fee \$16

A beginner's course, identical in scope with Business e73, but given in the Spring Session: should precede Business e73a.

Text-book to be announced.

**Business e75–76—Second year business law.** Credit IX. 2 points each Session. Mr. W. LILLY

7:40–9:30 p. m., Tuesday. Room 717 Hamilton. Fee \$16 each Session

This course is for students who have had Business e73–74 or an equivalent, and is provided more especially for students of accounting, but is open to others who qualify. It will cover topics of sales, bailments, agency, partnerships, corporations, real and personal property, bankruptcy, and negotiable instruments.



**Business e81—Fire insurance.** 2 points Winter Session. Professor R. H. BLANCHARD

5:50-7:30 p. m., Thursday. Room 515 Kent. Fee \$16

Fundamentals of insurance; types of insurers; policy contracts, forms and interpretation; fire prevention; rating; adjustments; underwriting; agency.

A discussion of the principles, practices, and problems of fire insurance.

Six lectures in this course will be given by Mr. R. P. Barbour.

**Business e82—Marine insurance.** Credit IX. 2 points Spring Session. Professor R. H. BLANCHARD and others

5:50-7:30 p. m., Thursday. Fee \$16

A survey of marine insurance with particular reference to the contract, types of losses, practical methods of underwriting and loss settlement, Lloyds and other insurers, and its bearing on foreign trade.

**Business e86—Casualty insurance.** Credit IX. 2 points Spring Session. Professor R. H. BLANCHARD

5:50-7:30 p. m., Wednesday. Fee \$16

Devoted principally to the development of employer's liability and to the principles and practices of workmen's compensation and its insurance; compensation insurance organizations, contracts, rates and rating, and reserves. Other leading forms of casualty insurance; such as accident and health insurance, automobile insurance, bonding, steam boiler insurance, etc.

**[Business e90—Commercial geography of China.** Credit IX. 2 points Spring Session. Mr. Y. M. CHEN. Not offered in 1921-1922, to be given in 1922-1923]

7:30-9 p. m., Thursday. Fee \$16

This course aims to cover:

First, a general discussion of the climatic conditions in China which affect production, transport, storage and sale of goods;

Second, the past and present industries of China and industrial possibilities;

Third, a detailed discussion of the important Chinese products, chiefly from the standpoint of international trade, such as (a) products derived from wild animals, (b) mineral products, (c) products of agriculture, and (d) manufactured products;

Fourth, a comparative study of the principal Chinese ports and cities from the standpoint of commercial importance, with a view toward assisting the American import and export merchants to select proper centers for the location of their branch offices and sub-branches.

**Business eb91-92—Commercial German.** Credit IX. 4 points each Session. Dr. E. W. ROESSLER

3:10-4 p. m., Monday, Tuesday, Thursday and Friday. Room 611 Journalism. Fee \$32 each Session

This course is intended primarily to train the student in oral business intercourse and in reading and writing German business letters. A thorough study will also be made of Germany's commercial methods, as well as of the past commercial relation between the United States and Germany. A study of the commercial geography of Germany, of the German export policy and of related subjects will be features of the course.

Prerequisite: German B in Columbia College, or equivalent.

**Commercial German eb93-94.** An advanced course. Credit IX. 2 points each Session. Dr. E. W. ROESSLER



4:20-5:10 p. m., Monday and Thursday. Room 712 Journalism. Fee \$16 each Session

The course is intended to give further training in the use of German in business. Special stress is laid on oral work and much practice is given in business correspondence and the use of German business forms.

Prerequisite: Business eb91-92, or admission by permission of the instructor.

**Business eb93-94—Commercial French: intensive training course in spoken French.** Credit IX. 2 points each Session. Professor P. DE BACOURT  
4:30-6:10 p. m., Tuesday. Room 707 Journalism. Fee \$16 each Session

To supplement Commercial French b93-94 of the School of Business.

Intended to develop facility of speech for commercial purposes.

Prerequisite: French b94 or French 4, or a command of spoken French sufficient to satisfy the instructor.

**Business eb95-96—Commercial Spanish: an intensive advanced course.** Credit IX. 3 points each Session. Mr. E. AGRAMONTE  
3:10-4:10 p. m., Wednesday; 9:30-11 a. m., Saturday. Room 605 Journalism. Fee \$24 each Session

To supplement Commercial Spanish b95-96 of the School of Business. The course is conducted in Spanish as much as possible.

Prerequisite: Spanish b95-96 or Spanish eB11-12, or a command of spoken Spanish sufficient to satisfy the instructor.

**[Business e98—China in home and foreign trade.** Credit IX. 2 points Spring Session. Mr. Y. M. CHEN. Not offered in 1921-1922, to be given in 1922-1923]

7:30-9 p. m., Tuesday. Fee \$16

This lecture course aims to cover an intensive study of China's foreign trade and domestic and foreign trade in China, including a general survey of the development of Chinese commercial relations with the West, as well as a discussion of China's resources, revenues, currency, weights and measures, and transportation facilities. Special attention will be given to Chinese business methods and conditions, as well as the opportunities for American enterprise.

### *Graduate Courses*

These courses are open to qualified students without restriction. It should be noted that graduate courses to which "Credit II, IX" is not attached, do not ordinarily count for credit toward a degree. Students desiring credit toward a degree should pursue the corresponding courses given in the School of Business during the day.

**Business e117—The psychology of advertising and selling.** Credit II, IX. 3 points Winter Session. Fee \$24. Special conferences will be arranged for students with practical and research problems. Professor A. T. POFFENBERGER and Mr. P. S. ACHILLES

Section 1—4:30-6:10 p. m., Wednesday. Room 615 Kent

Section 2—7:40-9:20 p. m., Monday. Room 307 Philosophy.

Application of psychological principles and experimental methods to the problems of appeal and response in advertising and selling. Analysis and evaluation of the methods and devices of publicity on the basis of (1) the known facts of human nature; (2) detailed examination of actual advertising campaigns and analysis of their results; (3) application of laboratory and statistical technique; and (4) comparative study of old and new methods of marketing. The material for the entire course is based on the findings of experimental investigation and

the results of actual sales campaigns. Illustrated by lantern slides and current publicity materials. This course may be appropriately followed by Psychology e146a or accompanied by Psychology e145.

**Business e118a—The psychology of advertising and selling.** Credit II, IX. 3 points Spring Session. Fee \$24. Professor A. T. POFFENBERGER and Mr. P. S. ACHILLES

Section 1—4:30–6:10 p. m., Monday.

Section 2—7:40–9:20 p. m., Wednesday.

This course is identical with Business e117, but is given in the Spring Session. It may be appropriately preceded by Psychology e145 or accompanied by Psychology e146a.

**Business e126—Syndicate organization and accounting.** Credit II, IX. 3 points Spring Session. Fee \$24. Mr. A. E. GALSTON  
7:40–9:30 p. m., Monday.

The course will begin with a discussion of the preliminary steps to be taken in the formation of a syndicate. The different kinds of syndicates, with the purposes to be fulfilled by each will be reviewed.

The actual formation of a syndicate will be undertaken, with a discussion of syndicate agreements and their terms, followed by explanations of the practical operations of a syndicate and the accounting in connection with these operations.

Income tax problems in connection with syndicate operations will receive full treatment.

Open for credit only to those who have had Business e25–26. Open to others only with the consent of the instructor.

**Business e127—Advanced problems in income tax accounting.** Credit II, IX. 3 points Winter Session. Mr. J. L. DOHR  
7:40–9:30 p. m., Monday. Room 717 Hamilton. Fee \$24

The course will deal with the problems of corporate and partnership accounting involved in the compilation of income and excess profits tax returns. The administrative procedure to be followed in the case of amended returns, claims, etc., will be given full consideration.

To pursue this course with advantage students should have a familiarity with income tax law and procedure.

Prerequisite: Business e53–54 or its equivalent, and Business e25–26.

Open to others only with the consent of the instructor.

**Business e129–130—Third year accounting.** 3 points each Session. Fee \$24 each Session. Professor J. O. MCKINSEY and Mr. C. M. NEUBAUER

Section 1—5:50–7:30 p. m., Tuesday. Room 302 Mines

Section 2—7:40–9:30 p. m., Friday. Room 402 Journalism

A course in advanced problems. The early part of the work will consist of specialized problems illustrating accounts and methods peculiar to various classes of enterprises. The latter part will comprise selected C. P. A. and miscellaneous problems. The work of the classroom will be conducted by means of lectures, demonstrations, and reports.

A charge will be made for the problems.

Prerequisite: Business e25–26.

**Business e131–132—Auditing theory and practice.** 3 points each Session. Mr. K. L. BAKER

7:40–9:30 p. m., Thursday. Room 512 Journalism. Fee \$24 each Session

This course is for advanced students only. A text-book on auditing will be used as a basis for home assignments, and students will be expected to spend at least two hours each week preparing for the quiz which forms part of the classroom work. Students will be taught to prepare working audit programs for various classes of business. The principal object of this course will be to train and develop the analytical faculties of the students. Methods of accounting used by unsuccessful concerns will be explained and the causes of failure analyzed. Methods

followed by concerns which need capital involving hypothecation of assets and manipulation of accounts with allied and subsidiary concerns will be discussed.

Students can apply the essential underlying principles of auditing as developed in this course to practical work by taking Business e133-134 (laboratory).

Text-book: Montgomery's *Auditing Theory and Practice* (Student edition).

Prerequisite: Business e25-26.

**Business e133-134—Accounting laboratory.** 3 points each Session. Fee \$24 each Session. Professor T. W. BYRNES and Mr. R. T. BICKELL

Section 1—7:40-9:30 p. m., Tuesday. Rooms 503 and 505 Journalism

Section 2—5:50-7:40 p. m., Wednesday. Rooms 503 and 505 Journalism

Section 3—7:40-9:30 p. m., Wednesday. Rooms 503 and 505 Journalism

This course consists of laboratory work exclusively. The material used will be the account books of various firms and corporations which have gone into bankruptcy or liquidation. These records present many interesting and complicated problems. Many sets of books are available, offering a wide scope for analysis and investigation. Practical questions and problems compiled from these old records will be given to the student to answer and solve by an actual examination of the books.

These will give the student a practical working test under conditions which very closely correspond to those to be met in actual practice, and the course will be particularly advantageous to students who have had only a limited opportunity to examine books used by various classes of enterprises.

The laboratory also contains many blank forms, designed for different classes of enterprises.

Prerequisite: Business e25-26, and the student should be pursuing Business e131-132 as a parallel course.

**Business e135—Office reports for executives.** Credit II, IX. 3 points Winter Session. Miss NINA MILLER

7:40-9:30 p. m., Tuesday. Room 302 Mines. Fee \$24

The principles involved in planning effective accounting systems and records for present-day office management.

The subject matter includes organization and arrangement of the office, the relation of the various departments and persons to one another, and the records which will best furnish facts of actual conditions to the executive.

Practical work will be required in designing systems for recording the information needed in the various departments of trading, manufacturing, and other business organizations, such as purchasing, storing, credits, collections, sales, etc.

Open to undergraduates with the consent of the instructor.

**Business e136—Analysis of financial reports.** Credit II, IX. 3 points Spring Session. Miss NINA MILLER

7:40-9:30 p. m., Tuesday. Fee \$24

Practical application of accounting and auditing principles to the analysis and criticism of the financial reports of industrial organizations, public service corporation, and railways. Drill in the classification of accounts prescribed by the Public Utility Commission of the State of New York, the Interstate Commerce Commission, and the recommendations of the Federal Reserve System. Open to undergraduates with the consent of the instructor.

**Business e138—Estate accounting.** Credit II, IX. 3 points Spring Session. Mr. HAROLD DUDLEY GREELEY

7:40-9:30 p. m., Friday. Fee \$24

A thorough treatment of the accounting features of trust estates. There will be given also a statement of the law governing trust estates, so far as it relates to the forms of accounting and so far as a knowledge of it is necessary to correct accounting procedure. The various tax laws affecting the estate are discussed. A short practice set for the student is provided.

Open for credit only to those who have had Business e25-26. Open to others only with the consent of the instructor.



**Business e139A—Department store accounting.** Credit II, IX. 1½ points Winter Session. Mr. H. F. BELL

7:40-9:30 p. m., Friday. Room 712 Journalism. Fee \$12

A thorough discussion of the accounting problems peculiar to the department store. Problems of organization and management so far as they affect the making of the records or their interpretation will also be considered.

Open for credit only to those who have had Business 25-26. Open to others only with the consent of the instructor. This course cannot be taken alone for credit but must be taken with another course.

(The course begins September 30, 1921, running for eight sessions through November 18, 1921, and should be followed by Business e139B, Brokerage accounts, in the case of students desiring credit.)

**Business e139B—Brokerage accounts.** Credit II, IX. 1½ points Winter Session. Mr. C. A. ELLIOTT

7:40-9:30 p. m., Friday. Room 712 Journalism. Fee \$12

A full treatment of the records and accounts peculiar to the stock brokerage business. Problems of organization and management as affecting the accounts, the equity balance sheet, etc., will receive consideration.

Open for credit only to those who have had Business e25-26. Open to others only with the consent of the instructor. This course can not be taken alone for credit but must be taken with another course.

(The course begins December 2, 1921, running for eight sessions, through February 3, 1922, and should follow Business e139A, Department store accounting, in the case of students desiring credit.)

**Business e161-162—Personnel management: general course.** Credit II, IX. 3 points each Session. Mr. L. OUTHWAITE

7:40-9:30 p. m., Tuesday. Room 508 Philosophy. Fee \$24 each Session

This course is intended for persons in executive and personnel work in industry.

The Winter Session will be given to the presentation of personnel technique; organization of personnel department; operation of employment office (including tests and forms); assignment and follow-up of new workers; training; transfer, promotion and discharge; maintenance of plant conditions; research problems and records including calculation of turnover and periodic survey of plant personnel conditions.

The Spring Session will be given to the problems connected with industrial relations and labor maintenance; incentives and rewards (wage systems and payment plans, benefit organizations, insurance and coöperative purchasing plans); employee representation and labor organization (shop committees, industrial councils, trade unions and radical labor movements); relation of personnel work to problems of social organization.

**Business e163—Personnel methods for office executives.** Credit II, IX. 3 points Winter Session. Mr. L. OUTHWAITE

7:40-9:30 p. m., Monday. Room 616 Hamilton. Fee \$24

Employment methods and work standards for electrical and office workers; employment forms; selective tests; methods of classifying work and rating performance; manuals of operation; research problems.

**Business e164—Personnel methods for institutions.** Credit II. 1 point Spring Session. Mr. L. OUTHWAITE

2:10-3 p. m., Monday. Fee \$8

Definition and description of personnel work; analysis of personnel of typical institutions; forms and procedures for employment and placement work; relations of medical and welfare staff to personnel office.

This course cannot be taken alone for credit, but must be taken with another course.



**Business e165-166—Professional occupations: their scope, function, and newer developments.** Credit II, IX. 3 points each Session. Dr. ELIZABETH K. ADAMS

7:40-9:30 p. m., Tuesday. Room 613 Hamilton. Fee \$24 each Session

The class is conducted in groups of not more than 25. Additional sections may be formed if there is sufficient demand.

This course is intended primarily for persons who wish to consider their own present or future occupation in its professional and social relations, or who are concerned with the occupational problems of others.

Using as a basis available concrete material on the nature and subdivisions of the various expert occupations, the types, grades, and numbers of workers required, the ranges of salary or income, the special training necessary, the course will deal with the character and standards of professional occupations, the professional aspects of industry, commerce, and government; the professional standing of newer occupations; the educational programs of the several professions, the possibilities of personnel specifications, tests, grades, and ratings in professional occupations; modes of securing professional employment.

The work of the course will involve reports, discussions, and individual and group conferences. Courses in psychology and personnel management may appropriately precede or accompany the course.

**Business e171-172—The principles and practices of factory management.** Credit II, IX. 3 points each Session. Professor W. RAUTENSTRAUCH  
7-9 p. m., Friday. Room 702 Hamilton. Fee \$24 each Session

This course is adapted to men in the industries who are in charge of departments of factories. Other men qualified by contact with production problems are also admitted. Attendants to these lecturers will be instructed in the principles underlying the successful management of factories and the practices of representative industries in the conduct of planning departments, tool rooms, drafting rooms, store rooms, purchasing and sales departments.

The problem of wage payments, costs of production and methods of cost finding and estimating are dealt with.

Attention is given to the establishment of lines of control through line organization and functional organization and to the graphic representation of the prime variable of the business upon which control may be founded. A couple of visits may be made to the factories operating under the lecturer's general supervision.

**Business e188—Trade conditions and possibilities in the Near East.** Credit II, IX. 3 points Spring Session. Mr. V. H. KALENDERIAN  
7:40-9:30 p. m., Monday. Fee \$24

This course aims to cover:

1. The physical and economic geography of the Near East, including the Caucasus and Persia; the history of the development and relative importance for trade.
2. The present industries and industrial possibilities.
3. The methods of and facilities for trade.
4. A study of the comparative importance of the different seaports on the Black and Mediterranean Seas, particularly with reference to the American export and import trade.
5. The status of the American business man in the Near East, particularly under the capitulations of the Ottoman Empire.

**Business e189—Ports and terminals.** Credit II, IX. 3 points Winter Session. Professor T. H. BROWN

5:50-7:30 p. m., Tuesday. Room 512 Journalism. Fee \$24.

Relation of the port to the territory it serves; geographic, engineering and economic aspects of harbors, docks, terminal buildings and their equipment; methods of controlling traffic; study of particular ports.

**Business e190—Ocean traffic management.** Credit II, IX. 3 points Spring Session. Professor T. H. BROWN

5:50-7:30 p. m., Tuesday. Fee \$24

Methods of handling freight and passenger traffic; charters; shipping documents.

**Business e195-196—American field crops.** Credit II, IX. 3 points each Session. 8 hours laboratory or equivalent. Conference weekly. Report optional. Professor O. S. MORGAN

Hours to be arranged. Fee \$24 each Session

The course consists of a study of the principles underlying the production and management of cereal and forage crops, and farm management factors related thereto.

Advanced studies of pot, jar, and cylinder soils' work is laboratory option.

Prerequisite: Agriculture e1-2, e3-4, Business e41-42, or their equivalent, and satisfactory preparation in botany and chemistry.

**Business e197-198—Soil management.** Fertilizers, soil amendments, soil toxins as related to plant production. Credit II, IX. 3 points each Session. 8 hours laboratory. Conference weekly. Report required. Professor O. S. MORGAN

Hours to be arranged. Fee \$24 each Session

The work consists of fertilizer soil amendments and crop tests of soils that have been surveyed. Careful laboratory tests and studies are emphasized, as well as a thorough study of experiment station and technical publications.

Prerequisite: Agriculture e1-2, e3-4, or their equivalent, and satisfactory preparation in botany and chemistry.

### *Economics*

**Economics e1-2—Principles of economics.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Dr. D. S. HANCHETT, Messrs. R. CLAUSING and L. R. ROBINSON

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 509 Hamilton

Section 2—4:30-5:45 p. m., Monday and Thursday. Room 502 Hamilton

Section 3—4:30-5:45 p. m., Tuesday and Friday. Room 602 Hamilton

Economics is the study of business activity from the standpoint of public welfare. This course undertakes first to explain the present-day organization and operation of industry, and second to consider how far the present situation needs correction from the standpoint of efficiency in production and justice in distribution. The course will be concerned with an historical and analytical study of the principles, followed by a discussion of practical economic questions, such as the tariff, money and banking, the labor problem, etc.

**Economics e1a—Principles of economics.** Credit I, IV. 3 points Winter Session. Mr. R. CLAUSING

4:30-5:45 p. m., Tuesday and Friday. Room 509 Hamilton. Fee \$24

Economics e2 given in the Winter Session.

Prerequisite: Economics e1.

**Economics e2a—Principles of economics.** Credit I, IV. 3 points Spring Session. Mr. F. S. HASEROT

4:30-5:45 p. m., Tuesday and Friday. Fee \$24

Economics e1 repeated in the Spring Session for new students. A beginning class.

**Economics e3-4—Principles of economics.** 2 points each Session. Fee \$16 each Session. Professor J. C. BONBRIGHT, Messrs. F. S. HASEROT, M. T. MOORE and W. H. REEVES

Section 1—5:50-7:30 p. m., Wednesday. Room 502 Hamilton

Section 2—7:40-9:20 p. m., Wednesday. Room 502 Hamilton

Section 3—7:40-9:30 p. m., Wednesday. Room 408 Hamilton

Section 4—7:40-9:20 p. m., Thursday. Room 502 Hamilton

Section 5—7:40-9:20 p. m., Friday. Room 509 Hamilton

This course covers the same ground as Economics e1-2, but involves less extensive reading and discussion.

**Economics e3a—Principles of economics.** 2 points Winter Session. Mr. F. S. HASEROT

7:40-9:30 p. m., Wednesday. Room 516 Hamilton. Fee \$16

Economics e4 given in the Winter Session.

Prerequisite: Economics e3 or e4a.

**Economics e4a—Principles of economics.** 2 points Spring Session. Fee \$16. Mr. R. CLAUSING

Section 1—7:40-9:20 p. m., Wednesday

Section 2—7:40-9:20 p. m., Thursday

Economics e3 repeated in the Spring Session for new students. A beginning class.

**Economics eb7-b8—Labor problems.** Credit IX. 2 points each Session. Dr. P. F. BRISSENDEN

4:30-6:10 p. m., Wednesday. Room 503 Hamilton. Fee \$16 each Session.

Origin of the labor problem. Present condition of labor in American industry. Wages and methods of wage payment. Labor organizations: their origin and development; trade-union structure, aims, policies, activities; the results of union operation in various industries. Strikes and lockouts. Collective bargaining. Arbitration and conciliation. Labor legislation. Social insurance. The employment department: its functions and the results of its activities. The shop committee movement. Industrial democracy.

**Economics eb103-104—Social standards in modern industrial society.** Credit II, IX. 3 points each Session. Mr. L. R. ROBINSON

7:30-9:10 p. m., Thursday. Room 516 Hamilton. Fee \$24 each Session

The course studies economic life from the viewpoint of present social movements. Its purpose is to trace the part which government and other social agencies play in the improvement of working conditions and the advancement of public welfare through the conscious direction of economic effort.

The subject matter includes such problems as the development of social insurance, principles of governmental price regulation, and the control of public utilities. After outlining the development of accepted social standards the course concludes with a brief consideration of the significance of such radical movements as communism, syndicalism and guild socialism. American conditions are emphasized.

Prerequisite: Elementary economics.

**Economics e106—Methods of economic research.** Credit II. 3 points Spring Session. Mr. L. R. ROBINSON

3:10-5 p. m., Friday. Fee \$24

A laboratory course acquainting the student with some important official sources—American and foreign—and the means of using them.

The session will be devoted to the study of a few problems of current interest, in the selection of which the wishes of the group will be consulted. Particular attention is paid to discrimination in the choice of material, and care in organizing data.

Prerequisite: Economics 1-2, or its equivalent, and permission of the instructor.

Number of students limited.



## CABLE TELEGRAPHY

**Cable telegraphy e11-12—Training for cable operators.** 3 points each Session. Professor W. I. SLICHTER and Mr. H. J. TOLHURST

7:30-9:20 p. m., Monday and Thursday. Room 307 Engineering. Fee \$24 each Session

This course is designed to give a training in both the scientific or technical principles of cable telegraphy, as well as in the manipulative skill and practice required to send and receive messages by the Morse Code as used by the cable companies. It is intended to equip the student with that knowledge and skill required to become an operator, and with sufficient scientific knowledge to assist him to rise to the position of chief electrician or superintendent of stations.

Students who take this course with the intention of becoming operators will be eligible for the scholarships valued at \$30 each Session. For information as to these scholarships address the Secretary of Columbia University.

**Calculating Machine Operation, see p. 131**

## CHEMISTRY

**For courses in General Science, see Journalism p. 92, and for other courses in Chemistry, see pp. 135, 136**

**Chemistry eA1—General chemistry.** Elementary course for students beginning the study of chemistry. 2 lectures, 1 recitation, and 3 hours' laboratory practice a week. Credit I, IV. 4 points Winter Session. Fee \$32. Professor S. J. KIEHL and assistants

Lectures, 7-7:50 p. m., Wednesday and Friday. Room 309 Havemeyer

Recitation, Sections I and II—8-8:50 p. m., Wednesday. Rooms 307 and 511 Havemeyer

Recitation, Sections III and IV—8-8:50 p. m., Friday. Rooms 307 and 511 Havemeyer

Laboratory, 7-9:50 p. m., Tuesday or Thursday. Room 602 Havemeyer

This course is the duplicate of the day course A1. It is prerequisite to the other courses in chemistry given in University Extension and to the first year chemistry in the combined six year College and Engineering course.

Deposit for breakage, \$20.

Text-books: Smith's *Elementary Chemistry and Laboratory Outline* (interleaved).

**Chemistry eA2—General chemistry.** Course eA1 repeated in the Spring Session for students desiring to begin in February. Credit I, IV. 4 points Spring Session. Fee \$32. Professor S. J. KIEHL and assistants

Lectures, 7-7:50 p. m., Wednesday and Friday

Recitation, Sections I and II—8-8:50 p. m., Wednesday

Recitation, Section III—8-8:50 p. m., Friday

Laboratory, 7-9:50 p. m., Tuesday or Thursday

Deposit for breakage, \$20.

**Chemistry eA3-A4—General chemistry.** Elementary course for students beginning the study of chemistry. Saturday afternoons throughout the year. Credit I, IV. 2 points each Session if taken for the entire year. Fee \$16 each Session. Mr. G. E. LANDT

1-4:30 p. m., Saturday

Lecture 3:30-4:30 p. m.; recitation, 3-3:30 p. m. Room 311 Havemeyer



Laboratory 1-3 p. m. Room 615 Havemeyer

Identical with eA1 or eA2.

Deposit for breakage, \$20 for the year.

Students using Chemistry eA4 to complete an imperfect elementary preparation may receive 4 points for the course on the approval of the instructor, paying \$32. Such students must register for Chemistry eA4 (a).

**Chemistry eX1-X2—Technical industrial quantitative analysis.** 3½ points each Session. Fee \$28 each Session. Professor H. A. FALES

7-9:50 p. m., Tuesday and Friday

Lecture, 7-7:50 p. m., Tuesday. Room 309 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday; 7-9:50 p. m., Friday. Room 504 Havemeyer

A course primarily designed so that those who are engaged in laboratories or works may follow up the technique or theoretical principles of the particular problems in which they are interested. The laboratory work will be assigned largely to meet the individual requirements of each student; the classroom work will be coordinated with that of the laboratory, and in addition will include certain topics of general interest, such as the theory of neutralization reactions, oxidation-reduction, complex iron formation, etc.

Prerequisite: Actual employment in a laboratory or works, or Chemistry 3-4, 11-12; Physics 6, 7-8, 49-50.

**Chemistry e3-4—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week in each Session. Credit I, IV, V. 6 points each Session. Fee \$48 each Session. Identical in content and credit with Chemistry e6-7. Mr. G. H. WALDEN, JR., and assistants

7-9:50 p. m., Tuesday, Wednesday, and Friday

Lecture, 7-7:50 p. m., Tuesday, Wednesday, and Friday. Room 311 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday. Room 615 Havemeyer

Identical with Chemistry e6-e7.

Deposit for breakage, \$25 first term; \$20 second term.

Prerequisite: Chemistry eA1, eA2, or the equivalent, and elementary physics.

**Chemistry e6—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 6 points Spring Session. Fee \$48. Mr. V. K. LA MER and assistants

7-9:50 p. m., Tuesday, Wednesday, and Friday

Lecture, 7-7:50 p. m., Tuesday, Wednesday, and Friday

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday

This course, which presupposes a knowledge of general chemistry (eA1) continues the study of general chemistry, with particular reference to giving a greater knowledge of descriptive chemistry and a more advanced and systematic discussion of general principles and their applications. This course followed by Chemistry e7 aims thus to prepare the student for the courses in organic chemistry or in qualitative analysis. It is equivalent to Chemistry 6—required of all first year students in the combined six year College and Engineering course, or to Chemistry 3-.

Deposit for breakage, \$25.

Text-books: Smith's *Introduction to Inorganic Chemistry* and *Experimental Inorganic Chemistry*.

Prerequisite: Chemistry eA1 or eA2 or the equivalent.

NOTE. Chemistry eA1 followed by Courses e6-7 or e3-4, e11, and e45-46 are accepted for admission to the College of Physicians and Surgeons.

**Chemistry e7—General inorganic chemistry.** 3 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 6 points Winter Session. Fee \$48. Mr. V. K. LA MER and assistants

7-9:50 p. m., Tuesday, Wednesday, and Friday

Lecture, 7-7:50 p. m., Tuesday, Wednesday, and Friday. Room 307 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday. Room 615 Havemeyer

This course is a continuation of Chemistry e6. It is equivalent to Chemistry -7 required of all second year students in the combined six year College and Engineering course, or to Chemistry

-4.

Deposit for breakage, \$20.

Prerequisite: Chemistry e6 or e3 or the equivalent.

**Chemistry e11—Qualitative analysis.** 2 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Winter Session. Fee \$40. Mr. L. P. HAMMETT

7-9:50 p. m., Tuesday and Friday; 8-9:50 p. m., Wednesday

Lecture, 7-7:50 p. m., Tuesday and Friday. Room 511 Havemeyer

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday. Room 602 Havemeyer

A systematic course in the theory and practice of inorganic qualitative analysis based upon the principles of modern chemistry. It is equivalent to Chemistry 14- required of all second year students in the combined six year College and Engineering course, or to Chemistry 11-.

Deposit for breakage, \$25.

Text-book: Steiglitz' *Qualitative Analysis, Pt. I.*

Prerequisite: Chemistry e6-7, 6-7, e3-4, or 3-4.

NOTE. Students who have previously completed the greater part of this course may, with the consent of the Director, register for the remainder, counting it 1 to 3 points.

**Chemistry e12—Qualitative analysis.** 1 hour classroom and 6 hours' laboratory work a week. Credit I, IV, V. 4 points Spring Session. Fee \$32. Mr. L. P. HAMMETT

8-9:50 p. m., Tuesday and Friday; 7-9:50 p. m., Wednesday

Lecture, 7-7:50 p. m., Wednesday

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday

This course is a continuation of Chemistry e11. It is equivalent to Chemistry -15 required of all third year students in the combined six year College and Engineering course, or to Chemistry -12.

Deposit, \$20.

Text-book: Steiglitz' *Qualitative Analysis, Pt. I.*

Prerequisite: Chemistry e14, 14- or -12.

NOTE. Students who have previously completed the greater part of this course may, with the consent of the Director, register for the remainder, counting it 1 to 3 points.

**Chemistry e14—Qualitative analysis.** 2 hours' classroom and 6 hours' laboratory work a week. Credit I, IV, V. 5 points Spring Session. Fee \$40. Mr. L. P. HAMMETT

7-9:50 p. m., Tuesday and Friday; 8-9:50 p. m., Wednesday

Lecture, 7-7:50 p. m., Tuesday and Friday

Laboratory, 8-9:50 p. m., Tuesday, Wednesday, and Friday

Identical with Chemistry e11, but given in the Spring Session. Should be followed by Chemistry e15.

Prerequisite: Chemistry e6-7, 6-7, e3-4 or 3-4.

Deposit for breakage, \$25.

**Chemistry e15—Qualitative analysis.** 1 hour classroom and 6 hours' laboratory work a week. Credit I, IV, V. 4 points Winter Session. Fee \$32. Mr. L. P. HAMMETT

8-9:50 p. m., Tuesday and Friday; 7-9:50 p. m., Wednesday

Lecture, 7-7:50 p. m., Wednesday. Room 511 Havemeyer

Laboratory, 8-8:50 p. m., Tuesday, Wednesday, and Friday. Room 602 Havemeyer

Identical with Chemistry e12, but given in the Winter Session. Should be followed by Chemistry e72.

Prerequisite: Chemistry e14 or e11.

Deposit for breakage, \$20.

**Chemistry e41-42—Organic chemistry.** General course complete in two semesters, equivalent to Chemistry 41-42. 3 hours' classroom and 6 hours' laboratory work a week in each Session. Credit I, IV, V. 6 points each Session. Fee \$48 each Session. Dr. T. C. TAYLOR and assistant.

Lecture 7-8:15 p. m., Tuesday and Friday. Room 413 Havemeyer

Laboratory 8:15-9:50 p. m., Tuesday and Friday; 7-9:50 p. m., Wednesday. Room 414 Havemeyer

Principles, nomenclature and type reactions involved in the study of such substances as petroleum, alcohols, aldehydes, acids, fats, sugars, proteins, coal tar, explosives, dyes, drugs, alkaloids, etc.

Prerequisites: Chemistry e3-4, or e6-7, e11 or e14 or the equivalent and elementary physics.

**Chemistry e110—The phase rule.** 2 hours. Credit II, V. 3 points Spring Session. Professor S. J. KIEHL

Lecture and conference 7:30-9:30 p. m., Thursday. Fee \$24

The classification and description of typical cases of chemical equilibrium, with special application to industrial processes.

**Chemistry e137—Physical chemistry.** 2 hours and conferences. Credit II, V. 3 points Winter Session. Professor H. A. FALES

Lectures, 7:30-8:20 p. m., Monday and Thursday. Room 311 Havemeyer. Fee \$24

A short course treating of the laws governing chemical phenomena from the point of view of their quantitative application in actual problems.

**Chemistry e150—Organic chemistry advanced laboratory course, analytical.** Two class hours and six laboratory hours each week. Equivalent of Chemistry 149 or Chemistry 150. Credit II, V. 4 points Spring Session. Fee \$32. Mr. W. E. MORGAN

7-9:45 p. m., Tuesday, Wednesday, and Friday

Class hour, 9-9:45 p. m., Tuesday and Wednesday

Laboratory hours, 7-9 p. m., Tuesday and Wednesday; 7-9:45 p. m., Friday

Group reactions in organic chemistry, identification of unknowns, combustions for carbon, hydrogen and nitrogen, estimation of other elements and of groups.

Deposit for breakage \$30.

Prerequisite: Chemistry 3-4, 11-12, 41-42, 63 or equivalents; Physics 6, 7, 8, 49-50 or equivalents.



**Chemistry e151—Organic chemistry advanced laboratory course, synthetic.** 1 class hour and 8 laboratory hours each week. Equivalent of Chemistry 151 or Chemistry 152. Credit II, V. 4 points Winter Session. Fee \$32. Mr. W. E. MORGAN

7-9:45 p. m., Tuesday, Wednesday and Friday

Class hour, 7-8 p. m. Wednesday. Room 413 Havemeyer

Laboratory hours, 7-9:45 p. m., Tuesday and Friday; 8-9:45 p. m., Wednesday. Room 414 Havemeyer

Selected syntheses of substances important as dyes, drugs, perfumes, photographic chemicals, etc.

Deposit for breakage, \$30.

Prerequisite: Chemistry 3-4, 11-12, 41-42, 63 or equivalents; Physics 6, 7, 8, 49-50 or equivalents.

Students should possess acquaintance with German and French.

## CHINESE

### *Far Eastern Trade*

The Slavonic Department under Professor JOHN DYNELEY PRINCE, with the consent of the University authorities, has arranged to administer temporarily the following courses. Students in the School of Business are allowed to take Business e90 and e98 only upon the approval of the Director:

**Chinese e1—Elementary Chinese.** 3 points Winter Session. Mr. MA SOO  
7-7:50 p. m., Tuesday and Thursday. Room 701 Hamilton. Fee \$24

The elements of the Chinese language with instruction in reading, writing and speaking.

**Chinese e5-6—Essentials of Chinese civilization.** 2 points each Session. Mr. MA SOO

8:20-9:30 p. m., Tuesday. Room 701 Hamilton. Fee \$16 each Session

A general introduction to Chinese literature, art, culture and thought.

A knowledge of Chinese is not necessary for this course.

**[Business e90—Commercial geography of China.** Credit IX. 2 points Spring Session. Mr. Y. M. CHEN. Not given in 1921-1922, to be given in 1922-1923.]

7:30-9 p. m., Thursday. Fee \$16

This course aims to cover:

First, a general discussion of the climatic conditions in China which affect production, transport, storage and sale of goods;

Second, the past and present industries of China and industrial possibilities;

Third, a detailed discussion of the important Chinese products chiefly from the standpoint of international trade, such as (a) products derived from wild animals, (b) mineral products, (c) products of agriculture, and (d) manufactured products;

Fourth, a comparative study of the principal Chinese ports and cities from the standpoint of commercial importance, with a view toward assisting the American import and export merchants to select proper centers for the location of their branch offices and sub-branches.

**[Business e98—China in home and foreign trade.** Credit IX. 2 points Spring Session. Mr. Y. M. CHEN. Not given in 1921-1922, to be given in 1922-1923.]

7:30-9 p. m., Tuesday. Fee \$16



This lecture course aims to cover an intensive study of China's foreign trade and domestic and foreign trade in China, including a general survey of the development of Chinese commercial relations with the West, as well as a discussion of China's resources, revenues, currency, weights and measures, and transportation facilities. Special attention will be given to Chinese business methods and conditions, as well as to the opportunities for American enterprise.

### **Croatian (see Serb, p. 122)**

### **Danish-Norwegian**

**Danish-Norwegian eA1-A2—Elementary course.** Credit I. 3 points each Session. Miss HÓLMFRÍÐUR ÁRNADÓTTIR

4:30-5:45 p. m., Tuesday and Thursday. Room 601 Hamilton. Fee \$24 each Session

Intended as an introduction into the language of Denmark and Norway, with training in vocabulary and fundamental grammatical facts. Elementary grammar, with easy exercises in composition and constant practice in reading. Drill in pronunciation and a considerable amount of conversational practice will form a part of the course.

### **DRAWING**

**See also Mechanical Drawing, p. 141**

**Drawing eW1—Freehand drawing.** 2 points Winter Session. Mr. R. E. O'NEILL

1:30-5:30 p. m., Saturday. Room 406 Engineering. Fee \$16

Will consist of practice in the elements of freehand perspective, and in drawing from casts or machine parts, buildings, trees, and in copying good reproductions in line, and in light and shade.

The completion of this course will be accepted as satisfying the entrance requirement in drawing.

**Drawing eW2—Freehand drawing.** 2 points Spring Session. Mr. R. E. O'NEILL

1:30-5:30 p. m., Saturday. Fee \$16

Drawing eW1 repeated in the Spring Session.

### **Economics (see Business, pp. 51, 52)**

### **ENGINEERING**

**See also Cable Telegraphy, p. 53**

#### **AUTOMOBILE ENGINEERING**

**Automobile engineering e1—Internal combustion engines.** 3 points Winter Session. Mr. F. H. DUTCHER

7:30-9:20 p. m., Wednesday. Room 307 Engineering. Fee \$24

Explanation and discussion of formula relating to automobile engines. Theory and practice in commercial work. Ignition and electrical systems. Investigation of cylinder processes by means of high speed indicator.

Prerequisite: Trigonometry or algebra.

## CIVIL ENGINEERING

**NOTE.** With the exception of Civil Engineering e1-2, these courses are intended solely for men already engaged in practical work. They do not correspond to day courses and no university credit is allowed for them. Students should note the prerequisites and are urged to confer with the instructor when in doubt as to the requirements. In connection with the courses in surveying attention is called to the complete practical courses given during the summer at Camp Columbia, Lakeside, Conn. These courses are open to properly qualified students who have fulfilled the necessary prerequisites. For further information address the Secretary, Columbia University, New York.

**Civil engineering e1-2—Theory of plane surveying.** Equivalent to Civil Engineering 2, advised for all students in the college preparatory course preliminary to the graduate courses in civil, mining, metallurgical, and sanitary engineering. Credit I, IV, V. 2 points each Session. Mr. W. J. KREFELD

7:30-9:10 p. m., Wednesday. Room 306 Engineering. Fee \$16 each Session

Winter Session: General principle of surveying and surveying instruments. Units and measurements. Errors and limits of precision. Tapes and measurement of distances. The vernier and level bubble. The wye and dumpy levels, theory of leveling, and rods. The compass, magnetic declination and variation, and local attraction. The engineer's transit; measurement of angles, azimuth and traversing. Latitude and departure, error of closure.

Spring Session: Surveys and computations; Land surveying, including farm, city and public land surveys, computation of coördinates and areas, parting off land, description, and relocation. Topographic surveying, transit and stadia method, theory and reduction of stadia measurements, the plane table and government work. Hydrographic, mine and construction surveys. An opportunity will be given students to handle and use the instruments described, by special arrangement with the instructor.

Prerequisite: Plane trigonometry (see Structural mechanics eX1-X2) or equivalent; also Winter Session prerequisite for Spring Session.

Text-book: Finch's *Plane Surveying*.

**Civil engineering eY1-Y2—Plain and reinforced concrete construction.**

3 points each Session. Professor J. K. FINCH

7:30-9:10 p. m., Monday and Thursday. Room 306 Engineering. Fee \$24 each Session

Winter Session: Advantages, general definitions. Cement, manufacture, specifications, testing. The aggregate, proportions and strength of concrete. Mixing, depositing, forms. Flexure and design of plain beams. Reinforced beams. Rectangular and "T" beams in bending. Shear and diagonal tension. Slabs, columns.

Spring Session: Theory, design and construction. Bearing power of soils, earth and water pressure and loads. Gravity and cantilever retaining walls. Counterfoot reservoir wall. Slab and buttress dam. Design of forms for same. Design of pipes and standpipe. Highway slab and girder bridges. Loft building, including foundations and typical beams and columns.

No text-book will be used for this course, but students will be furnished with pamphlets, notes and tables. The Spring Session will be largely given over to actual design. The instructor will be present on evenings set for this work, from 7-10 p. m., in the drafting room, Room 404 Engineering. As a reference book on the work of the Winter Session, Hool's *Reinforced Concrete Construction*, Vol. I, and as a general reference, Hool and Johnson, *Concrete Engineers' Handbook*, are recommended.

Prerequisites: Structural mechanics eZ1-Z2 and Mechanical drafting e1-2 or equivalent; also Winter Session prerequisite to Spring Session.

## ELECTRICAL ENGINEERING

**Electrical engineering e1—Elements of electrical engineering.** Lectures, 4 points Winter Session. Mr. W. A. CURRY

7:30-9:10 p. m., Tuesday and Friday. Room 302 Engineering. Fee \$32

Designed to give the student a general knowledge of the principles of electricity and magnetism and their applications in engineering practice.

Covers magnetism, electromagnetism, the application of Ohm's law to series and parallel circuits, power measurements, practical applications of Kirchhoff's laws, inductance, etc.

Prerequisites: Algebra, elementary chemistry and physics. Students should consult the instructor as to these prerequisites.

**Electrical engineering e2—Principles of direct current machinery.** Lectures and laboratory. 3 points Spring Session. Mr. W. A. CURRY  
7:30-9:10 p. m., Tuesday and Friday. Fee \$24

Designed to give the student a knowledge of the construction and characteristics of direct current generators and motors.

Covers the theory of generators and motors. Laboratory work consists of experimental work with shunt and compound generators and shunt, series and compound motors.

Prerequisite: Electrical engineering e1.

NOTE. A deposit of \$10 to cover possible breakage is required of students taking Electrical engineering e2.

**Electrical engineering e3—Elements of alternating currents.** Lectures. 4 points Winter Session. Professor F. W. HEHRE  
7:30-9:10 p. m., Monday and Thursday. Room 302 Engineering. Fee \$32

Designed to give the student a general knowledge of the principles of alternating currents.

Covers voltage and current relations in series and parallel circuits, power and power factor, inductive and capacity reactance, single and polyphase alternating current generators and armature windings.

Prerequisites: Electrical engineering e1 and e2 or equivalent. Students not having credit for e1 and e2 should consult with the instructor as to these prerequisites.

**Electrical engineering e4—Principles of alternating current machinery.** Lectures and laboratory. 3 points Spring Session. Professor F. W. HEHRE  
7:30-9:10 p. m., Monday and Thursday. Fee \$24

Designed to give the student a general knowledge of the construction and characteristics of alternating current machinery.

Considers the theory and operation of the principal types of alternating current machinery. Laboratory work consists of some experimental work with the alternator, transformer, induction and synchronous motors, rotary converter and the parallel operation of alternators.

Prerequisite: Electrical engineering e3.

NOTE. A deposit of \$10 to cover possible breakage is required of students taking Electrical engineering e4.

**Electrical engineering e5-6—Theory and operation of vacuum tubes and other high frequency apparatus.** 3 points each Session. Professor J. H. MORECROFT

7:30-9:20 p. m., Thursday. Room 302 Mines. Fee \$24 each Session

A review of advanced alternating current theory will take up the first part of the course; the characteristics of circuits such as are used in radio telegraphy and telephony will be treated in detail, numerous problems being given to illustrate the conclusions reached theoretically. Emphasis will be laid upon the limitations of the ordinary formulae when used in high frequency calculations.

The vacuum tube will be treated as completely as possible, its functions as detector, amplifier, and power generator being examined theoretically and in the laboratory. A course of about twelve experiments will parallel the lecture work; the experiments will embrace use of tubes, wave-meters, and other high frequency apparatus.

Prerequisites: The course is intended for those who have already had a thorough training in ordinary alternating current theory and measurements; enrollment only after personal interview with instructor in charge of the work.



## MECHANICAL DRAFTING

**Drafting e1-2—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, IV, V. 2 points each Session. Professor T. H. HARRINGTON and assistant

7:20-10 p. m., Tuesday and Friday. Room 601 Engineering. Fee \$16 each Session

This course is the equivalent of Drafting 1-2 given to college students looking forward to the advanced course in engineering.

It should, if possible, be taken in conjunction with Drafting e3-4.

The topics covered will be: the use of instruments; geometrical drafting; lettering; orthographic projection; topographical drafting; elementary working drawings.

Those desiring a knowledge of how to read mechanical drawings are advised to take Drafting e1-2 and e3.

**Drafting e1a—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, IV, V. 2 points Winter Session. Professor T. H. HARRINGTON and assistant

7:20-10 p. m., Tuesday and Friday. Room 601 Engineering. Fee \$16

Identical with Drafting e2, but given in the Winter Session.

For description see Drafting e1-2 above.

**Drafting e2a—Mechanical drafting.\*** 6 hours' lecture and drafting-room work per week. Credit I, IV, V. 2 points Spring Session. Professor T. H. HARRINGTON and assistant

7:20-10 p. m., Tuesday and Friday. Fee \$16

Drafting e1 repeated in the Spring Session for students entering in February.

For description see Drafting e1-2 above.

**Drafting e3-4—Descriptive geometry.** 2 hours' lectures per week. Credit I, IV, V. 2 points each Session. Professor T. H. HARRINGTON

6:30-7:20 p. m., Tuesday and Friday. Room 307 Engineering. Fee \$16 each Session

This course will cover elementary problems relating to the point, right line, and plane; generation and classification of lines and surfaces; tangent planes to surfaces of single and double curvature; intersection of surfaces by planes; development of single curved surfaces; intersection of single curved surfaces. If possible, this course should be taken in conjunction with Drafting e1-2.

**Drafting e6, e7, e8—Graphics, engineering, and structural drafting.** 3 hours' drafting-room work per week. 1 point for each course. Professor T. H. HARRINGTON

7:20-10 p. m., Tuesday or Friday. Room 601 Engineering. Fee \$8 for each course

These courses are identical with Drafting 6, 7, and 8, and are open only to students in the Schools of Mines, Engineering, and Chemistry.

**Drafting e10—Structural drafting.\*** 6 hours' drafting-room work per week. 2 points Spring Session. Professor T. H. HARRINGTON

7:20-10 p. m., Tuesday and Friday. Fee \$16

\* Students will be required to furnish their own drafting instruments and materials.



This course includes methods used in the detailing of structural work, standard connections beams, columns, plate girders and roof trusses.

Prerequisite: Elements of mechanical drafting.

### STRUCTURAL MECHANICS

NOTE. The following courses in structural mechanics are intended only for men engaged in practical work. They do not correspond to day courses and no University credit is allowed for them. For specific courses in architecture, especially in building materials, see pages 25 following.

**Structural mechanics eX1-X2—Elements and applications of algebra and trigonometry.** 2 points each Session. Mr. R. F. CLARK

6:10-7 p. m., Monday and Thursday. Room 302 Engineering. Fee \$16 each Session

The aim of this course is twofold: first, to give the student beginning the study of structural mechanics a clear understanding of the mathematics necessary for further study of the subject; second, to fit him to handle his present practical problems with greater facility.

The work of the Winter Session will consist of a drill in the principles and applications of elementary algebra, through quadratics, and including graphic methods. In the Spring Session there will be given a course in plane trigonometry and its application to problems of a practical nature. A thorough drill in the use of logarithms and the slide rule will be included.

Students are urged to present for class discussion problems arising in their work.

**Structural mechanics eZ1—Elements of coplanar statics.** 3 points Winter Session. Professor C. H. BURNSIDE

6:10-7 p. m., Tuesday and Thursday. Room 510 Fayerweather. Fee \$24

Algebraic and graphic methods are used in parallel; composition and resolution of forces; principles of equilibrium; determination of stresses in simple jointed frames, such as trusses and cranes; centers of gravity and centroids.

Prerequisite: Course eX1-X2 or its equivalent.

Text-book: Maurer's *Technical Mechanics*.

**Structural mechanics eZ2—Elements of mechanics of materials.** 3 points Spring Session. Professor C. H. BURNSIDE

6:10-7 p. m., Tuesday and Thursday. Fee \$24

Continuation of Course eZ1. Moments of inertia and radii of gyration of plane areas, built-up beam and column sections; direct tension, compression and shear; strength of beams and columns; deflection of beams.

Prerequisite: Course eZ1.

Text-book: Merriman's *Mechanics of Materials*.

**Structural mechanics eZ5-Z6—Estimating for building construction.** 3 points each Session. Mr. J. H. EISELE

7:30-9 p. m., Monday and Thursday. Room 601 Engineering. Fee \$24 each Session.

This course consists of the study of types of building construction, kinds of materials used and customary practice of architects and general contractors' offices. Each student is provided with a complete set of plans and specifications from which quantity surveys are made for the various trades involved in building construction. Estimating forms used in various general contractors' offices are studied. Unit cost analyses are made and types of construction compared from an economic standpoint.

Text-book: Joslins' *Plan Reading and Estimating*.

Reference Books: Kidder's *Pocket Companion*; Walker's *Estimators' Reference*; New York Building and Industrial Codes.

Prerequisites: Students should consult the instructor for the prerequisites of this course.

## ENGLISH

*Collegiate Courses in Composition*

*Department representative:* Professor D. L. Clark. Office hours Monday and Thursday 2-3 p. m. and 8:30-9 p. m. 710 Journalism.

**English eA1-A2—English composition.** Lectures, themes, and conferences. Credit I, IV. 3 points each Session. Fee \$24 each Session. Professor D. L. CLARK, Drs. DOROTHY BREWSTER, S. L. WOLFF, Messrs. A. C. BABENROTH, E. BRENNECKE, J. A. BURRELL, G. H. GENZMER, M. M. HOOVER, R. S. LOOMIS, G. H. MULLIN, Mrs. L. S. DIETRICK, Misses E. KRENNING and CATHERINE NEEDHAM

Section 1—1:45-3 p. m., Monday and Thursday. Rooms 707, 712 Journalism, 311 Havemeyer and 306 Engineering

Section 2—1:45-3 p. m., Wednesday and Friday. Rooms 603, 707, 712, 713 Journalism

Section 3—3:10-4:25 p. m., Monday and Thursday. Rooms 403 Avery, 603, 610 Journalism

Section 4—3:10-4:25 p. m., Tuesday and Friday. Rooms 403 Avery, 302 Engineering and 301 Mines

Section 5—4:30-5:45 p. m., Monday and Thursday. Rooms 605, 610 Journalism

Section 6—4:30-5:45 p. m., Tuesday and Friday. Room 605 Journalism

Section 7—7-8:15 p. m., Monday and Thursday. Room 507 Hamilton

Section 8—7-8:15 p. m., Tuesday and Friday. Room 507 Hamilton

Section 9—8:20-9:35 p. m., Monday and Thursday. Room 507 Hamilton

Section 10—8:20-9:35 p. m., Tuesday and Friday. Room 507 Hamilton

This course aims to give collegiate instruction in the fundamentals of structure and style in both practical and imaginative writing. As it is planned for students who have had four years of high school English or a satisfactory equivalent, it presupposes the student's mastery of English spelling, grammar, and punctuation. Students planning to study short story or journalism are advised to register for Sections 2 or 5.

**English eA3-A4—English composition.** Lectures, themes, and conferences. Credit I, IV, if taken both Sessions. 1½ points each Session. Dr. S. L. WOLFF 9-10:15 a. m., Saturday. Room 707 Journalism. Fee \$12 each Session

This course is equivalent to one-half of English A. It is offered for teachers and students who desire to gain a knowledge of the principles of rhetoric and English composition as they are now taught in the colleges.

Two one-page themes or one three-page theme a week will be called for. Students are expected to confer regularly with the instructor at times to be appointed within the conference period, 10:15-10:45 a. m. No other engagements should be made for this half-hour.

**English eA8—English composition.** Lectures, themes, and conferences. Credit I, IV. 3 points Spring Session

Hours to be arranged. See Spring Session Announcement. Fee \$24

Course eA1 repeated in the Spring Session for new students.

**English eA9—English composition.** Lectures, themes and conferences. Credit I, IV. 3 points Winter Session. Fee \$24. Messrs. R. S. LOOMIS, G. H. MULLIN and Miss CATHERINE NEEDHAM

- Section 1—1:45-3 p. m., Monday and Thursday. Room 605 Journalism  
 Section 2—1:45-3 p. m., Wednesday and Friday. Room 611 Journalism  
 Section 3—3:10-4:25 p. m., Monday and Thursday. Room 306 Engineering  
 Section 4—7-8:15 p. m., Tuesday and Friday. Room 611 Journalism

Course eA2 given in the Winter Session for students who have passed English eA1 or eA3 with a grade of A, B, or C.

**English eB5-B6—Advanced composition.** Credit I, IV. 3 points each Session. Mr. J. A. BURRELL

1:45-3:00 p. m., Monday and Thursday. Room 402 Engineering. Fee \$24 each Session

The aim is to acquaint the student with the problems of writing as they concern modern business affairs and to train him in applying the principles involved. It is intended to prepare the student for the special kinds of writing he may need to perform or direct in his business career.

The work will include reports of special investigations, corporations, institutions, municipalities, and officials, the conduct of house organs, special problems involved in correspondence, and the principles of advertising composition.

**English eB10—Argumentative writing.** Credit I, IV. 3 points Spring Session. Mr. R. S. LOOMIS

Hours to be arranged. Consult Spring Session Announcement Fee \$24.

This course will aim to give academic instruction in briefing, the study of the forms and technique of argument, the detection of fallacies and the writing of argument.

### *Special Courses in Writing*

No entrance examinations are required for admission to any of the following classes, but prospective students are expected to satisfy the individual instructors of their ability to profit by the course in question. New students intending to register for any of these courses should send to the Office of University Extension, not later than September 15, a story, sketch, or article of about 1,500 words, together with a letter of application for admission to a specified class. This letter should give a somewhat detailed account of their previous training.

**English e1-2—Advanced composition. Magazine articles.** Lectures, written work, conferences. Credit I, IV. 3 points each Session. Fee \$24 each Session. Professor D. L. CLARK and Mr. G. H. MULLIN

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 707 Journalism

Section 2—7-8:15 p. m., Monday and Thursday. Room 603 Journalism

This course will aim at teaching the composition of all types of writing that appear in the modern magazine, excepting fiction, drama and poetry. It is designed for the training of professional writers, but other students of ability may elect it with profit. There will be much actual composition and classroom discussion and frequent individual conferences with the instructor. Able students desiring assistance in the solution of their special problems will not be bound to a fixed program. To register for this course the student must have the written permission of the instructor.

**English e3-4—Advanced magazine article writing.** 6 points each Session. Professor D. L. CLARK

8-9:15 p. m., Wednesday. Room 507 Journalism. Fee \$48 each Session

The theory and practice of writing articles for the modern magazines. Planned for students who have shown ability in English e1-2, and for those who have had practical experience in



writing for publication. Admission only after individual consultation with the instructor. Registration limited.

**English e5-6—English composition.** Advanced course. Lectures, themes and theme criticism. Credit I, IV.  $1\frac{1}{2}$  points each Session. Dr. S. L. WOLFF  
11 a. m.—12:15 p. m., Saturday. Room 611 Journalism. Fee \$12 each Session

Open to students who have passed English A with high standing or to special students of maturity. This course presumes a knowledge of formal rhetoric and training in the essentials of composition, correctness and precision. From two to four pages of manuscript (250–300 words) are required each week.

**English e1b-2b—The short story: theory of fiction writing.** Lectures, themes, and criticism. 4 points each Session. Fee \$32 each Session. Misses HELEN R. HULL and SHIRLEY V. LONG

Section 1—3:10–4:25 p. m., Monday. Room 408 Avery

Section 2—4:30–5:45 p. m., Friday. Room 707 Journalism

Section 3—7:00–8:15 p. m., Monday. Room 617 Hamilton

A course for students who wish to write fiction and for those who wish to develop critical appreciation of narrative writing. A study of the essentials of narration; work upon characterization in fiction; the general necessities of the short story. Consideration of current fiction. A practical course in writing with criticism and class discussion. Open to those who have had one year of college composition, or who are taking English eA1 as a parallel course.

**English e1g—The short story.** Lectures, themes, criticisms. 4 points Winter Session. Dr. MABEL L. ROBINSON

4:30–5:45 p. m., Monday. Room 616 Hamilton. Fee \$32

This course corresponds to the second semester of English e1b-2b. It is intended for students who have had English e2g; for students who have had college work in narrative writing; and for students of special ability. The course presents the general necessities of the short story, with preliminary consideration of plot construction.

**English e2g—The short story.** 4 points Spring Session. Dr. MABEL L. ROBINSON

4:30–5:45 p. m., Monday. Fee \$32

A course for students beginning the study of short story writing, corresponding to English e1b of the Winter Session. The essentials of good narration, characterization, dialogue.

**English e1c-2c—The short story.** Advanced course. English composition. Theory of fiction writing. 4 points each Session. Fee \$32 each Session. Dr. DOROTHY SCARBOROUGH and Miss HELEN R. HULL

Section 1—9:30–10:45 a. m., Saturday. Room 712 Journalism

Section 2—3–4:15 p. m., Wednesday. Room 512 Journalism

Section 3—8–9:15 p. m., Wednesday. Room 507 Hamilton

A continuation of English e1b-2b. Story writing studied from the point of the literary critic and of the writer. Details of construction will be investigated and the student called upon to contrive plots. This course, which emphasizes the study of plot, is open to those who have completed or are taking Course 1b-2b or e1g-2g or to those who submit during the first week an acceptable sketch or story of not more than 5000 words as evidence of competency; individual conferences.

**English e1d-2d—The short story.** Second advanced course. 4 points each Session. Fee \$32 each Session. Dr. DOROTHY SCARBOROUGH

Section 1—4:30–5:45 p. m., Wednesday. Room 512 Journalism

Section 2—8–9:15 p. m., Tuesday. Room 603 Journalism



Students should consult the instructor at the regular class hour before registration. This course is open only to the following persons: those who have done promising work in English e1c-2c; those who have not completed Course e1c-2c but submit at the outset a story of unusual merit; and those graduate students specializing in English composition who wish advanced training in theory and criticism.

**English e1f-2f—Advanced short story writing.** 6 points each Session. Professor BLANCHE C. WILLIAMS

11 a. m.—12:15 p. m., Saturday. Room 512 Journalism. Fee \$48 each Session

Lectures, written work, conferences. In order to secure admission, applicants should write to the instructor before September 15, giving a detailed account of their previous training, and submitting a story as evidence of ability to profit from the course. In most cases registration will be limited to students who have completed the preceding courses.

**English e1e-2e—Juvenile story writing.** 4 points each Session. Dr. MABEL L. ROBINSON

7-8:15 p. m., Friday. Room 613 Hamilton. Fee \$32 each Session

The course is intended for those who wish to write juvenile fiction or to deal with it from a critical or an appreciative standpoint. The work will treat of the juvenile short story, the serial, and the various types of books, nature and animal books, fairy tales, adventure books, college and school stories, and general fiction. Attention will be given to the psychology of the child and of the adolescent as a factor involved in the understanding and writing of juvenile fiction. The writing work will include both the short story and the juvenile book.

**English e1h-2h—The technique of the novel.** 4 points each Session. Mr. D. DURKIN

4:30-5:45 p. m., Tuesday. Room 408 Avery. Fee \$32 each Session

An examination of the materials and methods of fiction as exemplified in the work of contemporary novelists. While the course is presented with a view to the requirements of those who desire to cultivate a fuller appreciation of the novel, it is primarily designed for those who wish to essay composition in this field. Exercises and class discussions will bear more particularly upon specific technical problems arising out of work submitted by students during the year.

**English e3b-4b—Play writing.** 4 points each Session. Fee \$32 each Session. Mr. HATCHER HUGHES

Section 1—11:10 a. m.—12:30 p. m., Saturday. Room 507 Journalism

Section 2—8-9:15 p. m., Thursday. Room 604 Philosophy

This course is designed for students desiring to write plays. In the beginning of the course each student will be required to submit the scenario of a play to be written during the year. These scenarios will be criticized with reference to their suitability for the stage, and the manuscripts prepared from them will be analyzed from the point of view of the dramatist. Specific technical problems will be discussed in class as they come up in the course of the work. Representative recent and current plays will be taken up and analyzed with a view to ascertaining the principles underlying their construction and the causes of their success or failure. Constant practice in plot construction and the preparation of scenarios will be given. In so far as possible the work of the course will be adapted to meet the specific requirements of the individual students.

**English e3c-4c—Play writing and stage work.** 4 points each Session. Miss MINOR W. LATHAM

8:20-9:35 p. m., Friday. Brinckerhoff Theatre. Fee \$32 each Session

This course is devoted to practical play writing from the point of view of actual stage presentation.

The work begins with written and acted pantomime which is carried through on the stage by members of the class to its final form as a one or three-act play. As far as possible, elementary problems of dramatic and theatrical writing are undertaken.

A finished one-act play or the first act of a three-act play is required for credit.

**English e3d-4d—Play writing, advanced course.** 5 points each Session.

Mr. HATCHER HUGHES

8-9:45 p. m., Friday. Room 604 Philosophy. Fee \$40 each Session

This course is for students who have completed English e3a-4a and for those who have had experience in writing plays. Admission to the course only after individual consultation with the instructor.

**English e3f-4f—Play production.** 3 points each Session. Mrs. CLARICE

V. MCCAULEY

7:30-9:20 p. m., Monday and Wednesday. Room 106 Schermerhorn. Fee \$24 each Session

This course is designed for students interested in practical dramatic work, both from the point of view of the actor and the author. Most of the class periods will be devoted to the actual production of plays written by the students of the classes in dramatic composition. Public performances will be given, and the student will thus be enabled to watch the development of the play from the time of its first reading rehearsal to the critical moment when it must meet the test of a first-night audience.

**English e15-16—English prosody, elementary course.** 3 points each

Session. Professor JOHN ERSKINE

4:30-6:10 p. m., Wednesday. Room 511 Hamilton. Fee \$24 each Session

A course in verse writing.

Prerequisite: a fair proficiency in the management of rhymes and meters, and an acquaintance with the usual stanza-forms. The poems of the students will be discussed in class. During the Winter Session the discussion will be chiefly of the subject matter and of the best ways to use it. During the Spring Session the discussion will tend rather to versification.

### *Oral Composition*

# **English e11-12—Public speaking.** Credit I, IV. 2 points each Session. Fee \$16 each Session. Messrs. E. M. HALLIDAY and H. C. FRANCE

Section 1—7:30-9:10 p. m., Wednesday. Room 206 Journalism

Section 2—7:30-9:10 p. m., Friday. Room 612 Journalism

Section 3—6-7:40 p. m., Monday. Room 402 Engineering

Section 4—7:40-9:20 p. m., Monday. Room 402 Engineering

This course will deal with public address. Its aim is to give practical training to men and women of whom speaking is demanded in their profession.

Winter Session: Three-minute extemporaneous addresses on topics of current interest, supplemented by drill in breathing, articulation, gesture and reading aloud.

Spring Session: Exposition, argumentation, after-dinner speaking; how to stir the emotions and move to action. #

**English e11b-12b—Advanced public speaking.** 2 points each Session. Mr.

H. C. FRANCE

5:50-7:30 p. m., Wednesday. Room 206 Journalism. Fee \$16 each Session

This course will be limited to those students who have finished the preceding course with unusually high standing and to those who have had considerable training in public speaking elsewhere.

**English e13-14—Elementary elocution.** Credit I, IV. 2 points each Session. Fee \$16 each Session. Mrs. ESTELLE H. DAVIS

Section 1—4:30-6:10 p. m., Monday. Room 206 Journalism

Section 2—4:30-6:10 p. m., Tuesday. Room 410 Mines

Section 3—4:30-6:10 p. m., Friday. Room 206 Journalism

Section 4—9:10-10:50 a. m., Saturday. Room 206 Journalism

Winter Session—The mechanics of voice and speech; breathing exercises, vocal gymnastics and a practical study of English phonetics. The correction of faults in tone (nasality, throatiness, breathiness), and localisms and sluggishness in speech.

Spring Session—A study of the principles underlying good reading aloud with special reference to phrasing, inflection, and emphasis.

Drill and individual practice at each lesson.

**English e13a-14a—Intermediate elocution.** 2 points each Session. Mrs. ESTELLE H. DAVIS

11 a. m.-12:40 p. m., Saturday. Room 206 Journalism. Fee \$16 each Session

Winter Session—A study of the emotional element in vocal expression with special reference to utterance, quality of voice, force, pitch, and time.

Spring Session—Practical application of the principles studied during the Winter Session to the oral presentation of types of literature such as the oration, the essay, the lyric, and dramatic narrative in prose and verse.

Prerequisite: English e13-14 or its equivalent.

**English e13b-14b—Advanced elocution.** 6 points each Session. Mrs. ESTELLE H. DAVIS

7:30-9:30 p. m., Tuesday and Thursday. Room 106 Schermerhorn. Fee \$48 each Session

A course in the rehearsal of scenes from the classics and modern drama, with the rehearsal of one complete play each term. During the first term the scenes will be chosen from the English drama up to the Restoration. The work of the second term will be from the time of Sheridan and Goldsmith to the present.

Prerequisite: English e13-14 and e13a-14a or their equivalent.

**Phonetics e1-2—Phonetics and pronunciation.** 3 points each Session. Mr. WILLIAM TILLY

4:30-6:10 p. m., Friday. Room 603 Journalism. Fee \$24 each Session

English pronunciation will be the chief subject; French and Spanish sounds will be treated incidentally. This elementary course will be the foundation for advanced courses in English, French and Spanish. The course will be suitable for teachers and students of modern languages, oral English elocution and singing; also for those whose business it is to correct speech defects or to train foreigners in an accurate pronunciation of English. An elementary practical knowledge of phonetics is recognized by modern linguists as the indispensable basis of all language study, whether theoretical or practical. The method of transcription employed will be that of the International Phonetic Association.

Pronunciation cannot be taught by mere imitation. The indispensable qualification of the teacher of oral English or elocution is a thorough practical knowledge on a scientific basis of the sounds of English and of certain foreign sounds. And for the teacher of modern languages a knowledge of the phonetics of the foreign language taught, but not less of English, the language of his pupils. With this phonetic qualification the native American is an infinitely better teacher of pronunciation than the unphonetic foreigner.

**Phonetics e3-4—Intermediate course.** 3 points each Session. Mr. WILLIAM TILLY

4:30-6:10 p. m., Wednesday. Room 603 Journalism. Fee \$24 each Session



English pronunciation will continue to be the chief subject. Open only to students who have had Phonetics e101-102 or equivalent instruction in this subject, or at the same time take Phonetics e1-2.

**Phonetics e5-6—Advanced course.** 3 points each Session. Mr. WILLIAM TILLY

4:30-6:10 p. m., Tuesday. Room 603 Journalism. Fee \$24 each Session

English pronunciation will continue to be the chief subject. Only open to students who have had Phonetics e3-4 or equivalent instruction in this subject or at the same time take Phonetics e3-4.

**Phonetics e7-8—Comparative phonetics.** 3 points each Session. Mr. WILLIAM TILLY

11 a. m.-12:40 p. m., Saturday. Room 603 Journalism. Fee \$24 each Session

A specialized course in phonetics planned to be of practical use to teachers and students of modern languages. In the Winter Session all the fundamental sounds of French will be carefully studied, and the practical difficulties met by teachers and students of these languages will be carefully considered. The foreign sounds will be compared with the English sounds which are apt to be substituted for them, causing foreign accent.

All foreign texts will be translated, so that students without previous knowledge of the languages can follow. These simple texts will serve as an introduction to the study of the languages on a phonetic basis.

Missionaries and members of the diplomatic and consular service will find the comparative courses useful.

**Phonetics e9-10—Comparative phonetics: advanced course.** 3 points each Session. Mr. WILLIAM TILLY

4:30-6:10 p. m., Thursday. Room 603 Journalism. Fee \$24 each Session

An advanced study of the phonetics of French, Spanish, Portuguese and other languages. Open only to students who have had Phonetics e7-8, or at the same time take Phonetics e7-8.

*Collegiate Courses in Literature*

**English eB1-B2—Survey of English literature.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Mr. A. C. BABENROTH in charge of course; occasional lectures by Professors A. H. THORNDIKE, W. P. TRENT, J. B. FLETCHER, G. C. D. ODELL, J. ERSKINE, E. H. WRIGHT, F. A. PATTERSON, C. S. BALDWIN, G. P. KRAPP, and W. W. LAWRENCE. The discussion sections will be in charge of Messrs. A. C. BABENROTH and E. BRENNECKE

Lecture, 3:10-4 p. m., Monday. Room 306 Mines

Discussion sections:

Section 1—2:45-4:25 p. m., Wednesday. Room 301 Mines

Section 2—2:45-4:25 p. m., Thursday. Room 301 Mines

Section 3—9-10:40 a. m., Saturday. Room 301 Mines

Section 4—1:20-3 p. m., Friday. Room 301 Mines

Students in this course meet for one hour weekly on Mondays for lecture and two hours in one of the quiz sections mentioned above. The course is designed primarily as a survey course in English literature. It aims to acquaint the student with the most important writings of the major authors in each period of the history of English literature.

**English eB3-B4—English literature.** Lectures, written reports, and discussions. Credit I, IV. 2 points each Session. Dr. S. L. WOLFF

8:45-9:35 p. m., Monday and Thursday. Room 503 Hamilton. Fee \$16 each Session



This course consists in part of the careful and appreciative study of portions of the works of Chaucer, Spenser, Milton, Pope, Wordsworth, and other poets.

Prerequisite: The ability to write English as well as may be expected of students who have completed course eA1-A2.

**English e21—English literature from 1780-1830.** Credit I, IV. 2 points  
Winter Session. Professor F. A. PATTERSON

4:20-6 p. m., Wednesday. Room 408 Avery. Fee \$16

This course will deal with English romanticism beginning with Cowper. After tracing the first signs of revolt against eighteenth-century thought and ideals, it will treat of the new spirit as it expressed itself in the works of the poets and prose writers of the early part of the nineteenth century. While the course will include the work of men not especially well known, it will aim to embrace in considerable detail the poetry of Wordsworth and his contemporaries. The work will be conducted by means of lectures, assigned readings and discussions.

**English e23-24—English literature from 1830-1890.** Credit I, IV. 2 points  
each Session. Professor J. H. H. LYON

7:30-9:10 p. m., Wednesday. Room 503 Hamilton. Fee \$16 each Session

A study of Victorian literature, beginning with Carlyle. In the Winter Session the work will center around Tennyson; in the Spring Session around Browning. Other poets, such as Arnold, Morris, Rossetti, and Swinburne will be studied. The course will be conducted by means of assigned readings, lectures, and discussions.

**English e35-36—Shakspeare.** Credit I, IV. 2 points each Session. Professor A. DE V. TASSIN

11 a. m.-12:40 p. m., Saturday. Room 602 Hamilton. Fee \$16 each Session

An introduction to the study of Shakspeare, the condition and character of his life and work and the technic of his plays studied from the dramatic rather than from the literary point of view.

**English e39-40—The English novel.** Credit I, IV. 2 points each Session.  
Dr. DOROTHY BREWSTER

11 a. m.-12:40 p. m., Saturday. Room 605 Journalism. Fee \$16 each Session

Beginning with Samuel Richardson, the course will trace the development of the novel down to the present day, with due attention to the influence of social and economic changes. The work of the Winter Session will include the early Victorian novel; in the Spring Session it will center around Meredith and Hardy. The work of a few of the later novelists will also be considered.

The lectures will be supplemented by assigned readings, reports, and discussions.

**English e41-42—Contemporary dramatic literature.** 3 points each  
Session. Mr. HEYWOOD BROWN

9:30-10:50 a. m., Saturday. Room 612 Journalism. Fee \$24 each Session

In this course study is made of representative works of the leading modern dramatists from Victor Hugo to Sir Arthur Pinero. Special attention is devoted to the evolution of contemporary stagecraft. The best new plays presented during the current theater season in New York are also analyzed from the point of view of the dramatic critic. The course is especially helpful to students who desire subsequently to write plays or to write dramatic criticism; it brings the actual theater of today within the reach of academic study.

### *Comparative Literature*

**Comparative literature e3-4—Masterpieces of European literature.**  
Credit I, IV. 3 points each Session. Professor J. H. H. LYON

4:30-5:45 p. m., Tuesday and Friday. Room 603 Hamilton. Fee \$24 each  
Session

This course is designed to give students an intimate acquaintance with those works of literature which are called World Masterpieces. The method followed will be primarily according to types; but the historical importance of each work studied will be made evident. Rapid outside reading is required of books generally found in all public libraries. Lectures, discussions and reports.

**Comparative literature e5-6—Greek and Latin literature in English translation.** Credit I, IV. 2 points each Session. Professor K. C. REILEY and Mrs. E. T. B. ENDICOTT

4:30-6:10 p. m., Monday. Room 611 Journalism. Fee \$16 each Session

Designed to give a general understanding of the literary achievements of the Greeks and the Romans, and the persistent influence exerted by these on the thought and art of later ages. The reading will include the earliest accessible portrayal of the familiar figures of classic legend such as Achilles and Hector, Odysseus and Penelope, Helen of Troy, Oedipus, Medea, Aeneas and Dido; also the sources of our information about great men of ancient times, such as Socrates, Pericles, and Julius Caesar. Special attention will be given to the first development of the literary forms which have moulded the poetry and prose of modern European nations: the epic, the lyric, the drama, history, the oration, the essay, the literary letter, philosophy, biography, the novel.

**Comparative literature e7-8—Modern European literature.** Lectures, readings and discussions. Credit I, IV. 2 points each Session. Fee \$16 each Session. Dr. DOROTHY BREWSTER

Section 1—3:10-4 p. m., Tuesday and Friday. Room 502 Hamilton

Section 2—7:25-8:15 p. m., Monday and Thursday. Room 509 Hamilton

The course will deal during the Winter Session with contemporary drama and fiction of England and France; during the Spring Session with that of Scandinavia and Germany, and especially with modern Russian fiction.

**Comparative literature e11-12—Contemporary poetry.** 2 points each Session. Miss HELEN R. HULL

3:10-4:25 p. m., Wednesday. Room 509 Hamilton. Fee \$16 each Session

This course deals with modern poetry of Europe and America. It includes a study of the development of present tendencies in poetic conceptions with some analysis of the social background of which the poetry is an expression and a study of modern poetic forms. The course is conducted by means of assigned readings, lectures, and class discussions.

### *Graduate Courses*

**English e205—Principles of English usage.** Credit II. 3 points Winter Session. Professor G. P. KRAPP

9-10:40 a. m., Saturday. Room 610 Philosophy. Fee \$24

Consideration will be given in this course mainly to the principles under which instances of divided use in standard modern English may be grouped.

**English e206—Standard English pronunciation, with special reference to the conditions of American speech.** Credit II. 3 points Spring Session. Professor G. P. KRAPP

10 a. m.-12 m., Saturday. Fee \$24

**English e231-232—English literature in the seventeenth century.** Credit II. 3 points each Session. Professor W. P. TRENT

5:10-6 p. m., Tuesday and Thursday. Room 307 Philosophy. Fee \$24 each Session

Lecture, with extended supplementary readings from Milton, Dryden and other writers, chiefly poets.

**English e237-238—English literature, 1832-1880.** Credit II. 3 points each Session. Professor A. H. THORNDIKE

5:10-6 p. m., Monday and Wednesday. Room 307 Philosophy. Fee \$24 each Session

Beginning with 1832, this covers the literature of the next fifty years, including the work of Macauley, Carlyle, Mill, Ruskin, Newman, Browning, Tennyson, Arnold, Mrs. Browning and other writers, as time permits.

### *Courses for Non-English-Speaking Students*

*Departmental representative:* Miss HELEN E. DILLER

These courses are intended for educated foreigners who may have little or no knowledge of English and wish to learn the language quickly. In all the classes, attention is given to correct pronunciation and good usage. Students who have their entire time for study are advised to elect the complete series, though they may register, if they prefer, for only one or more of the classes. Each student will be advanced as rapidly as his ability warrants

**English eV1-V2—Beginners' English.** 3 points each Session. Fee \$24 each Session. Misses HELEN E. DILLER and AMY I. SHAW

Section 1—4-5 p. m., Monday, Wednesday and Friday. Room 410 East

Section 2—7-8 p. m., Monday, Tuesday and Thursday. Room 403 Avery

This course is planned for educated men and women who have no speaking knowledge of English. Special attention to pronunciation and simple composition.

**English eV3-V4—Intermediate English.** 2 points each Session. Fee \$16 each Session. Misses HELEN E. DILLER, MAUDE M. HALL and AMY I. SHAW

Section 1—2-3 p. m., Tuesday and Thursday. Room 302 Philosophy

Section 2—5-6 p. m., Wednesday and Friday. Room 410 East

Section 3—7-8 p. m., Monday and Thursday. Room 302 Philosophy

Section 4—8:20-9:20 p. m., Monday and Thursday. Room 302 Philosophy

Reading aloud, oral reports, spelling, dictation and a weekly composition.

**English eV5-V6—Intermediate oral composition and conversation.** 3 points each Session. Fee \$24 each Session. Misses AMY I. SHAW and MAUDE M. HALL

Section 1—11 a. m.-12 m., Monday, Wednesday and Friday. Room 508 Philosophy

Section 2—10-11 a. m., Monday, Tuesday and Thursday. Room 610 Journalism

In this course students have much opportunity for individual expression. Life and customs in the United States will be discussed.

**English eV7-V8—Advanced oral composition and conversation.** 2 points each Session. Mr. M. M. HOOVER



6:10-7 p. m., Monday and Thursday. Room 603 Journalism. Fee \$16 each Session

Topics of general interest to the class are suggested, and students speak also on subjects of their own choosing.

**English eV9-V10—English grammar.** 2 points each Session. Fee \$16 each Session. Miss HELEN E. DILLER

Section 1—3-4 p. m., Tuesday and Thursday. Room 302 Philosophy

Section 2—7-8 p. m., Monday and Thursday. Room 308 Philosophy

Uses of words, kinds of sentences, paragraph building and English idioms are studied. Frequent short written compositions are required.

**English eV11-V12—English spelling and vocabulary making.** 2 points each Session. Miss MAUDE M. HALL

1-2 p. m., Monday and Thursday. Room 410 East. Fee \$16 each Session

Rules of spelling are explained and meanings of words made clear by use in sentences, both spoken and written.

**English eV13-V14—Phonetics for non-English-speaking students.** 2 points each Session. Mr. WILLIAM TILLY.

3-4 p. m., Wednesday and Friday. Room 603 Journalism. Fee \$16 each Session

Students are given practice in forming the sounds of English speech. Attention is paid to racial difficulties in pronunciation.

### *Preparatory Courses*

*Departmental Representatives:* Messrs. D. B. DUNCAN and M. M. HOOVER, Room 711 Journalism

**English eW1—English grammar.** 3 points Winter Session. Fee \$24. Messrs. D. B. DUNCAN, J. C. TRESSLER, Mrs. L. S. DIETRICK and Mrs. EDNA H. CHARLSEN

Section 1—1:45-3 p. m., Monday and Thursday. Room 612 Journalism

Section 2—1:45-3 p. m., Wednesday and Friday. Room 612 Journalism

Section 3—7-8:15 p. m., Monday and Thursday. Room 612 Journalism

Section 4—7-8:15 p. m., Tuesday and Friday. Room 402 Engineering

Section 5—8:20-9:35 p. m., Monday and Thursday. Room 612 Journalism

This course is intended for mature students who desire to acquire a thorough knowledge of the elementary principles of English grammar. After a rapid review of the parts of speech and their modifications, a detailed treatment of word elements, phrase elements, and clause elements and their relations in sentences will be given. Much time will be devoted to the analysis and synthesis of different types of sentences. Written work will be required for each Session. Punctuation will be regarded as a system of points to denote grammatical relations, and thus considerable attention will be given to this subject.

This course is recognized as a credit course for promotion licenses by the Board of Education. Students will be expected to confer regularly with the instructor at such times as he may designate.

Students who contemplate taking college entrance English, either English eX1-X2 or eY1-Y2, should have completed this course or its equivalent.

Text-book: Blount and Northup's *Elementary English Grammar*.

**English eW2—English composition.** 3 points Spring Session. Fee \$24. Messrs. D. B. DUNCAN, M. M. HOOVER, J. C. TRESSLER and Mrs. EDNA H. CHARLSEN



Section 1—1:45-3 p. m., Tuesday and Friday

Section 2—1:45-3 p. m., Monday and Thursday

Section 3—7-8:15 p. m., Monday and Thursday

Section 4—7-8:15 p. m., Tuesday and Friday

An elementary course in English composition especially planned for those who wish to gain power in writing through practice. The rhetorical essentials of narration, description, exposition, and argumentation will be discussed. Composition subjects will be drawn from the students' own experiences and from contemporary life rather than from literature. Weekly themes will be required, and by means of these the students are expected to master, so far as time permits, the technic of simple prose expression.

Students will be required to consult regularly with the instructor at such times as he may designate. This course, with the first half-year, English eW1, furnishes preparation for English eX1-X2 and English eY1-Y2.

Text-books: Woolley's *Handbook of Composition* and Brooks' *English Composition*, Book II.

**English eW4—English grammar.** 3 points Spring Session. Fee \$24. Messrs. D. B. DUNCAN, M. E. HENRY and Mrs. EDNA H. CHARLSEN

Section 1—1:45-3 p. m., Monday and Thursday

Section 2—7-8:15 p. m., Tuesday and Friday

Section 3—8:20-9:35 p. m., Monday and Thursday

Course eW1 repeated in the Spring Session.

**English eW5—English composition.** 3 points Winter Session. Fee \$24. Messrs. D. B. DUNCAN, M. E. HENRY and Miss E. KRENNING

Section 1—1:45-3 p. m., Wednesday and Friday. Room 302 Mines

Section 2—7-8:15 p. m., Monday and Thursday. Room 511 Hamilton

Section 3—7-8:15 p. m., Tuesday and Friday. Room 511 Hamilton

Course eW2 given in the Winter Session.

**English eX1-X2—English composition and literary readings.** Reading of classics, lectures, oral reports, class discussions, compositions, and written tests. 3 points each Session. Fee \$24 each Session. Messrs. D. B. DUNCAN, M. M. HOOVER, J. C. TRESSLER and Mrs. EDNA H. CHARLSEN

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 410 Mines

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 306 Mines

Section 3—8:20-9:35 p. m., Monday and Thursday. Room 603 Journalism

Section 4—8:20-9:35 p. m., Tuesday and Friday. Room 402 Engineering

This course is planned to give students an appreciation of literature and facility in composition. The work done will be in actual sequence to that in English eW1 and English eW2. In addition to the reading of masterpieces in prose and poetry, considerable attention will be given to the planning of compositions and to theme writing. The masterpieces studied will be analyzed in such a way as to show how to read and how to use these masterpieces to develop power in composition writing. The course will meet the needs of people who, while not desiring credit for entrance to college, desire guidance in reading, speaking, and writing. The successful completion of this course will count, in part, toward the removal of entrance conditions in English 1 and English 2. Students will be required to confer regularly with the instructor at such times as he may designate.

Prerequisite: A knowledge of elementary English grammar such as may be acquired in English eW1 or English eW4.

Text-books: Woolley's *Handbook of Composition* and ten classics selected from the list prescribed by the Committee on Uniform Entrance Requirements.

**English eY1-Y2—Literature and composition.** Themes, lectures, class discussion, and tests. 3 points each Session. Fee \$24 each Session. Messrs. D. B. DUNCAN, M. M. HOOVER, M. E. HENRY and Mrs. EDNA H. CHARLSEN

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 605 Journalism

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 605 Journalism

Section 3—8:20-9:35 p. m., Monday and Thursday. Room 410 Mines

Section 4—8:20-9:35 p. m., Tuesday and Friday. Room 410 Mines

This course is planned for three classes of people: (1) those who wish to gain adequate preparation for various college courses in English; (2) mature people who wish to gain accuracy in expression, power in writing, and general culture; and (3) students who wish to prepare themselves to pass the examinations of the College Entrance Examination Board.

The work will consist of a detailed study of four classics, a survey of English literature, and the preparation of many outlines and themes. Emphasis will be laid upon adequacy of information and accuracy of expression. The completion of this course with a grade of B will remove entrance conditions in English 2 in Columbia College. Students will be required to confer regularly with the instructor at such times as he may designate. Students already registered in this course who show obvious inability to carry the work will be transferred to Course eX1-X2.

Prerequisite: eX1-X2 or its equivalent (three years of high school English).

Text-books: Woolley's *Handbook of Composition*, Long's *English Literature*, and four classics selected from the list prescribed by the Committee on Uniform Entrance Requirements.

**English eZ1-Z2—English spelling and vocabulary.** 1 point each Session.

Fee \$8 each Session. Messrs. D. B. DUNCAN, G. H. GENZMER, Mrs. EDNA H. CHARLSEN and Miss E. KRENNING

Section 1—9:50 a. m., Monday and Thursday. Room 511 Journalism

Section 2—4:30-5:20 p. m., Wednesday and Friday. Room 612 Journalism

Section 3—6:10-7 p. m., Monday and Thursday. Room 612 Journalism

Section 4—7:10-8 p. m., Tuesday and Friday. Room 410 Mines

This course is designed for mature students who spell badly. An effort will be made to teach spelling through the three-fold appeal to the eye, the ear, and the touch. While considerable time will be devoted to phonics, syllabication and rules of orthography, much more time will be given to actual spelling. The aim will be to discover and correct the deficiencies of the individual student. Attention will be given to words in common use and words commonly misspelled rather than to unfamiliar and technical words. Each student will be required to keep an alphabetical list of all words he misspells.

Text-book: Eldridge's *Business Speller and Vocabulary*.

**English eZ3-Z4—Punctuation and sentence structure.** 2 points each

Session. Messrs. M. M. HOOVER, G. H. GENZMER and Mrs. L. S. DIETRICK.  
Fee \$16 each Session

Section 1—9:50 a. m., Tuesday and Friday. Room 206 Journalism

Section 2—4:30-5:20 p. m., Monday and Thursday. Room 306 Mines

Section 3—7:10-8:00 p. m., Monday and Thursday. Room 410 Mines

This course is a drill course in the application of grammar and punctuation designed to obtain correct and effective sentence structure.

**Business English e1-2—Business English and commercial correspondence.** 3 points each Session. Fee \$24 each Session. Messrs. D. B. DUNCAN and P. T. WARD

Section 1—11 a. m.-12 m., Tuesday and Friday. Room 512 Journalism

Section 2—7:30-9:20 p. m., Monday. Room 512 Journalism

Section 3—7:30-9:20 p. m., Tuesday. Room 602 Hamilton

Section 4—7:30-9:20 p. m., Wednesday. Room 410 Mines

Section 5—7:30-9:20 p. m., Thursday. Room 206 Journalism

This course is intended for office assistants, private secretaries, and those who wish to become proficient in effective business communication. The aim is to teach how to use words in such a

way as to make people act. The principles of literary compositions will be applied to commercial correspondence. Business situations will be analyzed, letters classified into type forms and the requisites of each class will be exemplified by many models. The psychology of advertising and the sales letter will be analyzed, and principles derived from this analysis will be applied in actual practice. The course will be not merely theoretical, but practical. Every student will be required to write several letters each week, and no one who has not sufficient time for such written work should take this course.

Special consideration will be given to letters of application, letters of complaint, sales letters, follow-up letters, and collection letters.

A prerequisite to this course is a knowledge of the principles of elementary English grammar.

### **Business English e4—Business English and commercial correspondence.**

3 points Spring Session.

7:30–9:20 p. m., Wednesday. Fee \$24

Like Business English e1–2, this course is intended for office assistants, private secretaries, and others who wish to use English effectively for business communication. It begins in the Spring Session and ends the following Winter Session.

### **Business English e5—Business English and commercial correspondence.**

3 points Winter Session. Dr. RUPERT TAYLOR

7:30–9:20 p. m., Wednesday. Room 512 Journalism. Fee \$24

A continuation of Business English e4, given in the Spring Session. The major part of the course will be devoted to various types of business letters, writing of reports, and other forms of writing used in business relations.

Prerequisite: Business English e1 or e4; English eA1 or eA8. Open also in special cases with the consent of the instructor to those students who can show ability to do the work satisfactorily.

## **FILING**

### **Filing e21—Indexing, filing, and cataloguing as applied in business.**

2 points Winter Session. Miss URSULA K. JOHNSTONE

7:45–9:45 p. m., Thursday. Room 516 Schermerhorn. Fee \$16

Lectures and practice. A course in indexing and filing correspondence, clippings, pamphlets, etc. The application of library methods, card and classification systems, especially the Dewey Decimal system, to records in business offices and special libraries, commercial houses, banks and corporations.

### **Filing e22—Indexing, filing and cataloguing as applied in business.**

2 points Spring Session. Miss URSULA K. JOHNSTONE

7:45–9:45 p. m., Thursday. Fee \$16

## **FINE ARTS**

For a course on Introduction to Roman art and archaeology, see Latin 149, p. 94; Introduction to Greek art and archaeology, see Greek 149, p. 86; Architecture, see pp. 25–31; and for other courses in Fine Arts, see pp. 138–141

**Fine arts e51—The art of the Metropolitan Museum—sculpture and the decorative arts.** A study of the originals in the Museum. 2 points Winter Session. Fee \$16. No University fee. Dr. G. KRIEHN

Section 1—10:30 a. m.–12:10 p. m., Saturday. Metropolitan Museum

Section 2—10:30 a. m.–12:10 p. m., Monday. Metropolitan Museum. Begins October 17



Section 3—2:30-4:10 p. m., Friday. Metropolitan Museum

Section 4—3:15-4:55 p. m., Saturday. Metropolitan Museum. Begins October 8

This course, combined with Fine arts e52a, offers a year's systematic study of the most important art objects in the Metropolitan Museum. It is an introductory course, designed to teach the appreciation of sculpture and the decorative arts, as practised in the great historic styles, and to outline briefly their history. Among the subjects treated, besides sculpture proper, will be ivories, enamels, ceramics, small bronzes, terracottas, furniture, tapestries and other decorative arts. Opportunities for the study of these subjects, rivaled only by the best European collections, are offered in the recently opened galleries of classical art, the new Pierpont Morgan memorial wing of decorative arts, the galleries of Egyptian art, the collection of Rodin sculptures, and in other departments. Special attention will be devoted to the needs of teachers and university students, for whom Section 2 is designed.

**Fine arts e52—The art of the Metropolitan Museum—the paintings.** A study of the originals in the Museum. 2 points Spring Session. Fee \$16. No University fee. Dr. G. KRIEHN

Section 1—10:30 a. m.—12:10 p. m., Saturday. Metropolitan Museum

Section 2—10:30 a. m.—12:10 p. m., Monday. Metropolitan Museum

Section 3—2:30-4:10 p. m., Friday. Metropolitan Museum

Section 4—3:15-4:55 p. m., Saturday. Metropolitan Museum

Planned for all who wish to learn how to judge and enjoy painting. A continuation of the preceding course, but may be taken independently. While special attention will be given to the technical qualities of painting, its content will not be neglected. Each Session will be devoted to a school or to individual masters of painting; but the treatment will be in historic sequence, thus outlining the history of painting. Among the topics treated are Italian painting, both primitive and developed; the early Netherlandish and German schools; Flemish and Spanish masters; Dutch painting, with special emphasis on Rembrandt (Altman collection); the old English masters; French painting, with emphasis on the Barbizon school; modern European painting; American painting, both early and contemporary. Students, teachers, and others wishing to take the examination should enroll if possible, in Section 2, which is designed especially for them.

**Fine arts e53-54—Outline of art history.** 2 points each Session. Dr. G. KRIEHN

3-4:30 p. m., Monday. Metropolitan Museum. Fee \$16 each Session. No University fee. Begins October 10

A general course, treating the great epochs of art in the western world from the appreciative as well as the historic point of view. The chief subjects are painting, sculpture, and architecture with emphasis on that phase in which the age or people found its highest expression; on sculpture, for example, in ancient Greece; architecture and decoration during the Roman and medieval epochs; on the painting and sculpture of the Renaissance, and on painting during the modern period. There will be special lectures on the great masters in whose works art culminated, such as: Michelangelo, Raphael and Titian in Italy, Rubens and Van Dyck in Flanders, Hals and Rembrandt in Holland, Velasquez in Spain, and Rodin in France. During the nineteenth century, the emphasis will be placed on the painting of France and the United States. A full syllabus will be distributed, and the lectures will be illustrated with the stereopticon. Use will be made of the important Museum Library, of its fine collection of reproductions, and of the casts and models of sculpture and architecture in the Museum.

This course is designed to supplement Fine arts e51a and e52a, treating whenever feasible the same subject each week, and should, if possible, be taken with them; but it may also be taken alone.

**Fine arts e55—Modern French Painting: a study of the originals in public and private collections of New York.** 2 points Winter Session. Dr. G. KRIEHN



11 a. m.-12:30 p. m., Tuesday. Metropolitan Museum. Fee \$16. No University fee. Begins November 1

An advanced course, the first part of a study of the painting of the nineteenth and twentieth centuries. It makes use of the opportunities for the study of modern French painting in the private and public collections of New York, which are excelled only by those of Paris. During this period France was the leader and Paris was the school of the nations. The course will treat the chief art movements of the nineteenth and twentieth centuries: Classicism (David, Ingres); Romanticism (Delacroix); Realism (Courbet); Impressionism (Manet, Monet, Renoir), and Post Impressionism (Cezanne, Gauguin, Cubism, Futurism). There will be special emphasis on the painters of Barbizon (Millet, Rousseau, Corot) and on Impressionism. The literature of the subject will be studied in the Museum Library.

This course is designed for those who have taken one of Dr. Kriehn's museum courses or an equivalent and for others sufficiently mature. The registration is limited to thirty.

**Fine Arts e56—Modern European and American painting: a study of the originals in private and public collections of New York.** 2 points Spring Session. Dr. G. KRIEHN

11 a. m.-12:30 p. m., Tuesday. Metropolitan Museum. Fee \$16. No University Fee. Begins February 14

An advanced course, a continuation of the preceding, but may be taken independently. It takes advantage of the exceptional opportunities for the study and enjoyment of the painting of the nineteenth and twentieth centuries, offered by private collections and current exhibitions in New York. The subjects are the paintings of Holland (Israels, Mauve, Maris), Germany, Great Britain, Spain (Zulauga, Sorolla), and certain other European countries. Especial attention will be devoted to the important American school, the present aspects of which will be studied in current exhibitions, including those of the National Academy of Design.

This course is offered under the same conditions as Fine Arts e55.

**French, see pp. 110-114**

## GEOGRAPHY

**Geography e25—Physical geography of the lands.** Lectures and laboratory work. Credit I, IV. 2 points Winter Session. Professor E. M. LEHNERTS  
8:20-10 p. m., Monday. Room 401 Schermerhorn. Fee \$16

This course deals primarily with the origin and evolution of the surface features of the earth. The chief topics considered are: The work of rivers, glaciers, waves, and winds, and the evolution of the forms which they produce; the different types of plains, plateaus, mountains and volcanoes, and their stages of development under stream erosion; the representation of land forms by topographic maps, block diagrams and other methods of illustration.

Special attention will be given to the needs of those members of the class who are engaged in, or looking forward to, the teaching of elementary physical geography.

**Geography e26—Physical geography of the atmosphere and oceans.** Lectures and laboratory work. Credit I, IV. 2 points Spring Session. Professor E. M. LEHNERTS

8:20-10 p. m., Monday. Fee \$16

A general treatment of meteorology, climatology, and oceanography. The first part of the course consists of an introductory discussion of the earth as a globe; latitude, longitude, and time; methods of map projection; the geographic effects of the earth's rotation and revolution and of terrestrial magnetism. The major part of the time is devoted to consideration of the constitution, temperature, and pressure of the atmosphere; weather predictions and the making of weather maps; climatic provinces. In connection with the ocean the following topics will be considered: The composition and temperatures of ocean water; ocean currents

and their effects on navigation, climate, and the distribution of food fishes; tides and their influence on harbors, navigation, and sewage disposal; wave action and its effect on shores and harbors.

As in Geography e25 special attention will be paid to the needs of those engaged in, or looking forward to, the teaching of elementary physical geography.

**Business e11-12—Economic geography.** 2 points each Session. Fee \$16 each Session. Mr. J. E. ORCHARD

Section 1—2:45-4:25 p. m., Wednesday. Room 402 Journalism

Section 2—4:30-6:10 p. m., Monday. Room 507 Journalism

Section 3—7:40-9:30 p. m., Monday. Room 516 Hamilton

An introductory but non-technical course designed as part of a liberal education. Lays the foundation of further study of economic geography; explains some environmental factors that influence man's economic and social development.

## GEOLOGY

**Geology e1—General geology.** A general introduction to the subject of geology. Lectures and laboratory work. Credit I, IV. 3 points Winter Session. Dr. H. N. CORYELL

8:20-10 p. m., Tuesday and Friday. Room 401 Schermerhorn. Fee \$24

This course covers an introduction to the common rocks, their structure, origin, and occurrence in nature; rock weathering and its products, geological activities of the air; the streams and the sea; characteristics and work of glaciers, volcanoes, and earthquakes.

The laboratory work consists of a study and identification of common rocks, drawing of profiles and structure sections, interpretation of topographical maps, etc. There will be several field trips on Saturday afternoons.

No prerequisite. Equivalent to Geology 1 in Columbia College. A knowledge of elementary chemistry is desirable.

**Text-book:** Chamberlin and Salisbury, *College Geology*.

**Geology e2—Historical geology.** The origin of the earth and its development—succession of plant and animal life. Lectures and laboratory. Credit I, IV. 3 points Spring Session. Professor J. J. GALLOWAY

8:20-10 p. m., Tuesday and Friday. Fee \$24

This course deals with the origin of continents and ocean basins and their development during successive geologic periods, characteristic sections and their interpretations, study of important types of fossils as indication of geologic age; the glacial period and the antiquity of man; development of surface features or physiography.

The laboratory work consists of the study of maps, the making of sections, and the identification of fossils, followed by work with physiographic models. There will be several excursions on Saturday afternoons in the spring.

**Prerequisite:** Geology 1 or Geology e1 or e11.

**Text-books:** Chamberlin and Salisbury, *College Geology*; Grabau, *Syllabus of Historical Geology*; Pirsson and Schuchert, *Geology*.

**Geology e3—Lithology.** An introduction to the study of rock-forming minerals and rocks. Demonstration lectures and laboratory work. Credit I, IV. 3 points Winter Session. Mr. R. J. COLONY

7-8:15 p. m., Tuesday and Friday. Room 402 Schermerhorn. Fee \$24

The methods of determining minerals, especially rock-forming minerals; classification of rocks; laboratory practice with both minerals and rocks. The object is to attain facility in sight recognition and discrimination of these natural products, and mastering hand specimen determination and classification.

**Text-book:** Kemp's *Handbook of Rocks*.

**Geology e4—Elementary petrography.** An introduction to the study of rocks, from thin sections, with the microscope. Laboratory demonstration method of work. Credit I, IV, V. 3 points Spring Session. Mr. R. J. COLONY  
6:30–8:10 p. m., Tuesday and Friday. Fee \$24

Methods of mineral identification; structural differences and classification of rocks. A standard set of fifty rocks is used as the basis of this course and particular attention is given to forms of description.

Text-books: Luquer's *Minerals in Rock Sections* and Harker's *Petrology*.

## GERMAN

The attention of students in German is called to the evening classes in Spoken Language described in a separate bulletin; also to the course in Linguistics, p. 96

**German eA1–A2—Elementary course.** Credit I, IV. 4 points each Session. Fee \$32 each Session

Section 1—4:30–5:55 p. m., Tuesday, Wednesday, and Friday. Room 402 Hamilton. Mr. M. G. BACH

*Section 2 limited to men matriculated in Columbia College.*

Section 2—10–10:50 a. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 702 Hamilton. Mr. O. P. SCHINNERER

Section 3—7–8:15 p. m., Monday and Thursday; 7–8:45 p. m., Wednesday. Room 402 Hamilton. Mr. J. S. WARD

This course familiarizes the beginner with the common vocabulary and the fundamental grammatical facts of the language so as to enable him to read easy German at sight. Reading forms part of the work from the beginning, together with grammar study, easy exercises in composition, and a considerable amount of colloquial practice in the phrases of everyday life. Although this course is intended for beginners, it may be taken with profit by those who have some previous knowledge of the language, but are deficient in grammar. Students entering in February should take Course eA8. For Course eA1 no previous knowledge of German is required.

The entire course completes the college entrance requirement (*a* and *x*) in elementary German.

**German eA8—Elementary course. Part I.** Credit I, IV. 4 points Spring Session. Mr. C. A. LUFT

7–8:25 p. m., Monday, Wednesday and Thursday. Fee \$32

Equivalent to German eA1, but given in the Spring Session for students who enter at that time. This course should be followed by German sA2 in the Summer Session (equivalent to German eA2).

**German eA9—Elementary course. Part II.** Credit I, IV. 4 points Winter Session. Mr. L. A. SHEARS

7–8:15 p. m., Monday and Thursday; 7–8:45 p. m., Wednesday. Room 406 Hamilton. Fee \$32

Equivalent to German eA2, but given in the Winter Session.

This course should be followed by German eB4 in the Spring Session.

**German eB1–B2—Intermediate course.** Credit I, IV. 4 points each Session. Fee \$32 each Session

Section 1—3–4:25 p. m., Tuesday, Wednesday and Friday. Room 402 Hamilton. Mr. J. S. WARD



Section 2—4:30–5:55 p. m., Monday, Wednesday and Thursday. Room 408 Hamilton. Mr. C. A. LUFT

This course is intended for students who have satisfied the college entrance requirement in elementary German or have taken Course eA1–A2 or an equivalent. Course eB2 completes the requirement in intermediate German (*b* and *y*) for college entrance or for a degree.

The work of this course includes the reading (partly at sight), of moderately difficult prose and verse by standard modern and classical authors; grammatical instruction, beginning with a rapid review of the elements and embracing the fundamental principles of syntax and word-formation; exercises in composition and free reproduction, oral and written, with considerable colloquial practice. The texts studied will be selected with reference to variety of style and vocabulary and will include Freytag's *Die Journalisten* and Schiller's *Wilhelm Tell*.

Prerequisite: Elementary entrance, German eA2 or an equivalent.

**German eB4—Intermediate course.** Credit I, IV. 4 points Spring Session.  
Mr. L. A. SHEARS

4:30–5:55 p. m., Monday, Wednesday and Thursday. Fee \$32

Equivalent to German eB1, but given in the Spring Session.

**German eB5—Intermediate course.** Credit I, IV. 4 points Winter Session.  
Mr. L. A. SHEARS

4:30–5:55 p. m., Monday, Wednesday and Thursday. Room 406 Hamilton.  
Fee \$32

Students completing this course with a mark of A or B may enter German eJ2 or German eE2. Equivalent to German eB2, but given in the Winter Session.

**German eE1–E2—Readings in science.** Credit I, IV. 3 points each Session. Mr. O. P. SCHINNERER

4:30–5:45 p. m., Monday and Thursday. Room 402 Hamilton. Fee \$24 each Session

This course is designed to enable the student to read difficult German with facility, in order that he may consult technical journals and works of reference in that language in connection with his later professional studies.

Prerequisite: Intermediate German eB2 or eB5.

**German eJ1–J2—Readings in newspapers and magazines.** Credit I, IV. 3 points each Session. Dr. G. A. BETZ

4:30–5:45 p. m., Tuesday and Friday. Room 406 Hamilton. Fee \$24 each Session

This course is intended for students who look forward to entering the School of Journalism; also for those who wish to acquire facility in reading as preparation for using the language in the study of history, economics or politics rather than as an introduction to the study of German or other literature (see German e5–6). The work includes a review of German syntax, with some practice in writing and speaking (see also German e11–12).

Prerequisite: Intermediate entrance, German eB2, or an equivalent.

**German e5–6—Introduction to the classics.** Selected works of Goethe, Schiller, and Lessing. Credit I, IV. 3 points each Session. Professor H. H. L. SCHULZE

4:30–5:45 p. m., Tuesday and Friday. Room 511 Hamilton. Fee \$24 each Session

This course aims to make the student familiar with representative works of the classical period and the outlines of its history, and to increase the student's command of vocabulary and idiom by means of supplementary sight reading and by interpretation of the text without the medium of translation.



The course will include the reading and study of selected dramas of Lessing, Goethe, and Schiller, with brief discussion of other works in connection with assigned private reading. As the course affords but little practice in speaking and writing German, it is recommended that Course e11-12 be taken in connection with it.

Prerequisite: Course eB2, or an equivalent.

**German e7-8—Modern German prose.** Rapid reading from recent historians, essayists and critics. Credit I, IV. 2 points each Session. Mr. C. A. LUFT  
11 a. m.—12:40 p. m., Saturday. Room 508 Philosophy. Fee \$16 each Session

Designed more especially for students looking forward to graduate work at Columbia or elsewhere, in history, economics, or literature. Aims to give facility in reading.

**German e11-12—German writing and speaking.** Credit I, IV. 2 points each Session. Professor W. A. BRAUN

9-10:40 a. m., Saturday. Room 508 Philosophy. Fee \$16 each Session

An advanced practice course, but with a distinctly literary content. It presupposes a good reading knowledge and fair ability to understand the spoken language. This course will be conducted wholly in German. The conversation will be upon topics chosen from the field of literature, daily life, and current events. The composition work will consist in the rendering of outlines of the literature read and in the preparation of original themes.

**Business e91-92—Commercial German.** Credit IX. 4 points each Session. Dr. E. W. ROESSLER

3:10-4 p. m., Monday, Tuesday, Thursday and Friday. Room 611 Journalism. Fee \$32 each Session

The course is intended primarily to train the student in oral business intercourse and in reading and writing German business letters. A thorough study will also be made of Germany's commercial methods, as well as of the past commercial relations between the United States and Germany. A study of the commercial geography of Germany, of German export policy and of related subjects will be features of the course.

Prerequisite: German B in Columbia College, or equivalent.

**Business e91a-92a—Commercial German. An advanced course.** Credit IX. 2 points each Session. Dr. E. ROESSLER

4:20-5:10 p. m., Monday and Thursday. Room 712 Journalism. Fee \$16 each Session

The course is intended to give further training in the use of German in business. Special stress is laid on oral work and much practice is given in business correspondence and the use of German business forms.

Prerequisite: Business eb91-92, or by permission of the instructor.

**German e145-146—Advanced syntax and synonymy.** Credit II. 3 points each Session. Professor F. W. J. HEUSER

11 a. m.—12:40 p. m., Saturday. Room 514 Philosophy. Fee \$24 each Session

This course, open only to advanced students, is designed especially for those who desire to perfect their practical command of German. Written exercises and themes are required and much attention will be paid to distinctions of synonyms and to difference between classic, modern literary and colloquial usage.

**Properly qualified Extension students will also be admitted to the following courses:**

**German 105—German literature in the first half of the nineteenth century;** from the rise of the Romantic School to the revolution of 1848. Credit II. 3 points Winter Session. Professor R. H. FIFE

4:10-5 p. m., Tuesday and Thursday. Room 514 Philosophy. Fee \$24

**German 106—German literature in the second half of the nineteenth century.** Credit II. 3 points Spring Session. Professor F. W. J. HEUSER

4:10-5 p. m., Tuesday and Thursday. Fee \$24

**German 131—Germany and its institutions.** Lectures, readings in English and themes. Credit II. 3 points Winter Session. Professor R. H. FIFE

4:10 p. m., Monday, Wednesday and Friday. Room 508 Philosophy. Fee \$24

The course introduces the student to the physical and ethnographical features of Germany and its economic, social and political life and institutions, with illustrative readings from works in English.

## GOVERNMENT AND PUBLIC LAW

### GOVERNMENT

**Government e1-2—American government.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Drs. R. S. BOOTS, E. D. GRAPER and Mr. A. G. DEWEY

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 709 Hamilton

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 709 Hamilton

Section 3—7-8:15 p. m., Monday and Thursday. Room 709 Hamilton

A general survey of the whole field, based largely on Beard's *American Government and Politics* (edition of 1914) and designed both for those who wish to teach the subject in the schools and for those who wish to gain an insight into the responsibilities of citizenship. Attention will be confined to national government in the Winter Session; to state, municipal, and local government in the Spring Session. Government e2 is open only to those who have had e1

**Government e4—American government.** Credit I, IV. 3 points Spring Session. Fee \$24. Mr. A. G. DEWEY

Section 1—3:10-4:25 p. m., Monday and Thursday

Section 2—7-8:15 p. m., Monday and Thursday

Equivalent to Government e1, but given in the Spring Session.

**Government e5—American government.** Credit I, IV. 3 points Winter Session. Mr. A. G. DEWEY

3:10-4:25 p. m., Tuesday and Friday. Room 716 Hamilton. Fee \$24

Equivalent to Government e2, but given in the Winter Session.

**Government e114—Governmental regulation of commerce and industry.** 3 points Spring Session. Credit I, II, IX. Mr. A. W. MACMAHON

8-9:40 p. m., Wednesday. Fee \$24

A study of the existing national and state legislation which attempts to control commerce and industry, and of the administrative devices by which it is enforced.

**Government e117—Present-day party issues and methods.** Credit II. 3 points Winter Session. Mr. A. W. MACMAHON

8-9:40 p. m., Wednesday. Room 709 Hamilton. Fee \$24

This course deals with the political activity of the outstanding social groups in the American population.

**Government e123—Problems of public administration.** Credit I, II. 3 points Winter Session. Dr. L. H. GULICK

4:10-6 p. m., Wednesday. Room 709 Hamilton. Fee \$24

This course is given from the standpoint of the executive, emphasis being laid upon the technique and standards of public administration. It treats budget making, purchasing, personnel management, accounting control, taxation, the management of public institutions, the promotion of public health, the construction and maintenance of public works, and the administration of public safety from this point of view.

**Government e124—Problems of municipal finance.** Credit II. 3 points Spring Session. Dr. L. H. GULICK

4:10-6 p. m., Wednesday. Fee \$24

This intensive course is for those who plan entering civic or public service and for teachers of government. It deals with such problems as: the assessment of property for municipal taxation, special assessments, city budgets, bonding, the collection of taxes, the audit of accounts, salary policies, the purchase of supplies, and municipal pensions. A number of field trips will be arranged for qualified students.

**Government e125—The history and government of New York City.** Credit II. 3 points Winter Session. Dr. A. E. PETERSON

11 a. m.-12:40 p. m., Saturday. Room 707 Journalism. Fee \$24

Emphasis on the historical development of the City; the settlement, organization and activities of the colonial municipality in the seventeenth and eighteenth centuries; the City during the pre-Revolutionary excitement; the development of the port, of transit facilities, of manufacturing; and the intellectual development of the nineteenth and twentieth centuries.

**Government e126—The history and government of New York City.** Credit II. 3 points Spring Session. Dr. A. E. PETERSON

11 a. m.-12:40 p. m., Saturday. Fee \$24

A natural sequel to Government e125, but open to students who have not taken the preliminary course. The present government of the City is considered, with particular attention to functions, the course being designed especially for those who contemplate teaching civics or related subjects in the local schools.

**Government e127—The functions of the federal government.** Credit II. 3 points Winter Session. Dr. W. E. MOSHER

4:10-6 p. m., Friday. Room 712 Journalism. Fee \$24

This course deals with the administrative activities of the national government. A study of organization will serve as the basis for discussion of the functions of the important bureaus and other units. The historical expansion of governmental activities will be considered with special reference to the development of lines of research, education, and regulation.

**Government e128—The civil service profession.** Credit II. 3 points Spring Session. Dr. W. E. MOSHER

4:10-6 p. m., Friday. Fee \$24

This course surveys the opportunities for a career in the public service, federal, state and municipal. Conditions governing entrance, transfer and promotion, and the present salary scale and salary increments are considered. Special attention is given to opportunities for those with an engineering, legal or medical degree, for those trained in government, economics or statistics, and for those interested in scientific research.

#### PUBLIC LAW

*Departmental Representative:* Mr. H. F. Munro. Office hours, 11 a m, Monday and Wednesday, and 2:30 p. m. Tuesday. Room 611 Kent



**Public law e101-102—History and growth of international relations.**

Lecture-study course. Credit II. 3 points each Session. Mr. H. F. MUNRO

7:40-9:20 p. m., Monday. Room 614 Kent. Fee \$24 each Session

Introductory—historical: A brief consideration of the history of international relations and earlier forms of internationalism; Roman law; the Christian Church; the Holy Roman Empire; feudalism; the formation of national states.

Study of national policies: *Status quo*: balance of power; concert of Europe; open door; Monroe Doctrine; imperialism.

Problems of international peace: Nationality; races; protection and free trade; armament; proposals for world peace.

World organization: Hague conferences; courts of arbitration; international unions; private international associations; the world's financial organization; the League of Nations.

International law and diplomacy: The principles of international law as derived from the practice of independent states are studied from the point of view of fundamental law of the world which constitutes the basis of our international society. Diplomacy is studied as a means to secure the recognition of international law and the protection of national interests and policies.

**Public law e103-104—Principles and practice of international law.**

Lecture-study course. Credit II. 3 points each Session. Mr. H. F. MUNRO

4:30-6:10 p. m., Tuesday. Room 403 Avery. Fee \$24 each Session

This course begins with a brief introductory examination of the basic principles of international law relating to war, peace, and neutrality. Application of principles to selected cases. Critical examination of current questions arising in the international relations of the United States and other countries. Especial emphasis is laid upon the practice of arbitration and the possibilities of its wider extension.

Text-book: Stowell and Munro's *International Cases*, with parallel readings in various text-books.

No previous knowledge of law is required.

**Public law e119-120—Modern European and American diplomacy.**

Credit II. 3 points each Session. Mr. H. F. MUNRO

7:40-9:20 p. m., Wednesday. Room 614 Kent. Fee \$24 each Session

Fundamentals of world politics. The European concert and the balance of power. Alliances and ententes. European crises since 1870. International congresses and conferences. The collapse of European diplomacy, 1914. The state papers critically examined. The Peace Conference of 1919.

American diplomacy during the Civil War, especially with respect to problems of neutrality. Foreign relations of the United States, 1865-1898. Anglo-American arbitrations. The diplomacy of the Spanish-American War. The United States as a world power. Canal diplomacy. The United States and the Great War.

**Public law e121—History of diplomacy. Credit II. 3 points Winter Session. Mr. H. F. MUNRO**

10-10:50 a. m., Monday and Wednesday. Room 615 Kent. Fee \$24

Evolution of relations between independent states and manner in which those relations are conducted. History of diplomatic system of Europe from its beginnings to present time, and exposition of preceding religious, dynastic, territorial and commercial struggles. Development of European concert prior to Peace of Westphalia. Examination of most important of general European treaties, beginning with those concluded at Congress of Westphalia, and ending with those of the Peace Conference of 1919.

**Public law e122—History of American diplomacy. Credit II. 3 points Spring Session. Mr. H. F. MUNRO**

10-10:50 a. m., Monday and Wednesday. Fee \$24



Special attention given to history and methods of diplomacy of the United States: (1) Diplomacy of Revolution; (2) period from Treaty of Peace of 1783 to termination of War of 1812; (3) from the termination of that War to the Civil War; (4) from outbreak of that War to the present time.

**Public law e177—Inter-American relations.** Credit II. 3 points Winter Session. Mr. S. G. INMAN

7:40-9:20 p. m., Tuesday. Room 614 Kent. Fee \$24

The aim of this course is to study historic relations between Hispanic America and the United States, with a view to discovering how past misunderstandings may be avoided and future relations improved. Topics treated will include racial inheritances of Hispanic Americans, Bolivia's international doctrine, Monroe Doctrine, Pan-American conferences, elements of union and division in Hispanic-American countries, new policy of the United States in the Caribbean, Mexican-American relations, Hispanic America, and the World War, human qualities in Pan-Americanism.

## GREEK

For a course in Linguistics, see p. 96

**Greek e1-2—Elementary Greek.** Credit I, IV. 4 points each Session. Dr. HELEN MCCLEES

4:30-5:55 p. m., Monday, Wednesday and Thursday. Room 501 Hamilton. Fee \$32 each Session

This course is intended for students who have no previous knowledge of Greek.

Reading and oral drill will form a large part of the classroom work and a careful study will be made of the fundamental forms and grammatical principles of the language. The prepared work will be limited to three classroom hours each week. Thirty-five minutes of each period will be devoted to additional oral and written drill and practice. The work will be based primarily upon Xenophon's *Anabasis* but in the Spring Session selections from Homer's *Iliad* will also be read.

**Greek e3—Homer, Iliad.** Credit I, IV. 3 points Winter Session. Dr. META GLASS

3:10-4:25 p. m., Tuesday and Thursday. Room 518 Hamilton. Fee \$24

Prerequisite: 2 units of Elementary Greek or the equivalent.

Extension students who are qualified will also be admitted to the following courses:

**Greek 149—Introduction to Greek art and archaeology.** Credit II. 3 points Winter Session. Professor C. H. YOUNG

3:10-4 p. m., Monday, Wednesday and Friday. Room 401 Avery. Fee \$24

Lectures, required reading, and reports upon assigned topics with occasional visits to the Metropolitan Museum of Art. The course will begin with a brief survey of the Prehellenic antiquities, but the main stress will be laid on historic Greek art, especially in the fields of architecture and sculpture, though there will also be some study of vases, terra-cottas, etc. Museum hours will be arranged at beginning of course.

**Greek 156—Topography and monuments of Attica and Athens.** Credit II. 3 points Spring Session. Professor C. H. YOUNG

3:10-4 p. m., Monday, Wednesday and Friday. Room 401 Avery. Fee \$24

Lectures, required reading, and reports upon assigned topics. The course will offer a general survey of the subject with special emphasis upon the extant monuments.

**Greek 255-256—Greek manners and customs.** Credit II. 3 points each Session. Professor C. H. YOUNG

One two hour session. Hour to be arranged. Fee \$24 each Session

Designed to give a general survey of the private life of the Greeks. Lectures, with outside reading and reports upon assigned topics. An essay upon some special subject of investigation will be required in each Session.

**Greek 203-204—Greek literature. Part II, Prose.** Credit II. 3 points each Session. Professor L. R. VAN HOOK

5:10 p. m., Wednesday and Friday. Room 712 Philosophy. Fee \$24 each Session

Designed to give a general view of the development of Greek prose writing. Extensive reading, especially in the orators.

## HISTORY

*Departmental Representative:* Mr. EDWARD M. EARLE, Room 710 Hamilton Hall. Office Hours: 4:30-5:15 p. m., Monday and Thursday.

**History eX1—American history.** Texts, discussions, readings, notes, maps. 3 points Winter Session. Fee \$24. Messrs. R. F. NICHOLS and W. H. CALLCOTT  
Section 1—4:30-5:45 p. m., Tuesday and Friday. Room 702 Hamilton  
Section 2—7-8:15 p. m., Monday and Thursday. Room 703 Hamilton

This course aims to cover the requirements for college entrance and to give a brief survey of the essential facts of American history from the earliest discoveries to the present time. The study will give due emphasis to political, territorial, commercial, industrial and social development. The successful completion of this course will count toward the removal of entrance conditions in history.

**History eX2—American history.** Texts, discussions, readings, notes, maps. 3 points Spring Session. Fee \$24. Messrs. R. F. NICHOLS and W. H. CALLCOTT  
Section 1—11 a. m.-12:15 p. m., Tuesday and Friday  
Section 2—7-8:15 p. m., Monday and Thursday

Course eX1 repeated in the Spring Session.

**History e1—The foundations of modern Europe.** Lectures, readings and discussions. Credit I, IV. 3 points Winter Session. Fee \$24. Professor H. J. CARMAN, Messrs. E. M. EARLE, A. M. ARNETT and J. G. GAZLEY

Section 1—1:45-3 p. m., Monday and Thursday. Room 603 Journalism  
Section 2—3:10-4:25 p. m., Monday and Thursday. Room 703 Hamilton  
Section 3—3:10-4:25 p. m., Tuesday and Friday. Room 703 Hamilton  
Section 4—4:30-5:45 p. m., Tuesday and Friday. Room 703 Hamilton  
Section 5—8:20-9:35 p. m., Monday and Thursday. Room 703 Hamilton  
Section 6—7-8:15 p. m., Tuesday and Friday. Room 703 Hamilton

After a brief survey of the contributions of the ancient world and of the middle ages to European civilization, the course will deal with important political, economic and intellectual achievements from the fifteenth century to the eighteenth. It will treat of the spirit of reform and of revolt, oversea colonization, monarchy by divine right, the various aspects of the "old régime," the French Revolution, and the era of Napoleon.

Text: Hayes, *Political and Social History of Modern Europe*, 2 vols. Syllabus: Earle, *An Outline of Modern History*.

Taken in conjunction with Philosophy 1, this course may be substituted for Contemporary Civilization A1 as given in Columbia College.

**History e1—Modern and contemporary history.** Lectures, readings and discussions. Credit I, IV. 3 points Winter Session. Fee \$24. Messrs. J. D. CLARKSON and G. ROBINSON

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 702 Hamilton

Section 2—8:20-9:35 p. m., Tuesday and Friday. Room 703 Hamilton

Course e2 given in the Winter Session.

**History e2—Modern and contemporary history.** Lectures, readings and discussions. Credit I, IV. 3 points Spring Session. Fee \$24. Professor H. J. CARMAN, Messrs. E. M. EARLE, A. M. ARNETT and J. GAZLEY

Section 1—1:45-3 p. m., Monday and Thursday

Section 2—3:10-4:25 p. m., Monday and Thursday

Section 3—3:10-4:25 p. m., Tuesday and Friday

Section 4—4:30-5:45 p. m., Tuesday and Friday

Section 5—8:20-9:35 p. m., Monday and Thursday

Section 6—7-8:15 p. m., Tuesday and Friday

This course is designed as an introduction to current national and international problems. The principal topics will be the work of the Congress of Vienna in reshaping the map of Europe, the industrial revolution, the development of Italian and German unity, the Third French Republic, the rise of Russia, the intellectual achievements of the nineteenth century, modern social problems, imperialism in Africa and the Orient, and the causes, character and consequences of the War.

Taken in conjunction with Philosophy e2, this course may be substituted for Contemporary Civilization A2 as given in Columbia College.

**History e2a—The foundation of modern Europe.** Lectures, readings and discussions. Credit I, IV. 3 points Spring Session. Fee \$24. Messrs. J. D. CLARKSON and G. ROBINSON

Section 1—4:30-5:45 p. m., Monday and Thursday

Section 2—8:20-9:35 p. m., Tuesday and Friday

Course e1 repeated in the Spring Session.

**History e5-6—A survey of the history of the ancient world.** Lectures, readings and discussions. Credit I, IV. 3 points each Session. Fee \$24 each Session. Dr. W. E. CALDWELL

Section 1—4:30-5:45 p. m., Monday and Thursday. Room 709 Hamilton

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 702 Hamilton

Gives particular attention to economic conditions and the development of art, literature, philosophy and religion in the Orient, Greece and Rome. The successful completion of this course may count toward the removal of entrance conditions in history and three points of College credit.

**History e9—The formation of the United States.** Lectures, readings and discussions. Credit I, IV. 2 points Winter Session. Professor D. R. FOX  
7-8:40 p. m., Monday. Room 716 Hamilton. Fee \$16

After a survey of the European background of American history and the establishment in the New World of European institutions of contrasted types, attention is fixed upon the English settlements, their development, and their experience with the colonial system seeking to protect and control them, resulting finally in revolt, union and the organization of the United States.

Syllabus: Schuyler and Fox, *Syllabus of American History*.



**History e10—The development of American nationality.** Lectures, readings and discussions. Credit I, IV. 2 points Spring Session. Professor D. R. Fox

7-8:40 p. m., Monday. Fee \$16

Beginning with the triumph of Jeffersonian democracy, this course considers our foreign relations culminating in the War of 1812, and traces the influence of manufactures, the frontier and slavery upon the sentiment of nationalism. The Civil War is treated with emphasis upon its political and constitutional phases; followed by a survey of reconstruction in the southern states, after which attention is paid to the development of railroads, the conflicts of capital and labor, currency and the tariff, imperialism and political readjustment to meet new social needs.

Syllabus as for History e9.

**History e19—Imperialism and world politics in the nineteenth and twentieth centuries.** Credit I, IV. 2 points Winter Session. Professor P. T. MOON

2:45-4:25 p. m., Thursday. Room 512 Journalism. Fee \$16

Traces the recent growth of imperialism and analyzes its characteristics as exemplified in the partition of Africa, the awakening of Japan, the problem of China, the interplay of ambitions in the Far East, the Bagdad railway scheme, the Mexican question, etc. Attempts to show the importance of imperialism and world politics in relation to the war and the peace conference.

**History e20—Political and social aspects of the war and its results.** Credit I, IV. 2 points Spring Session. Professor P. T. MOON

2:45-4:25 p. m., Thursday. Fee \$16

Laboratory course. A study of the war, the peace conference, and current events, with the aim of bringing the happenings of the present day into correlation with such fundamental features of modern history as nationalism, democracy, socialism, militarism, and imperialism.

**History e57-58—A general survey of English history from earliest times to the present.** Credit I, IV. 3 points each Session. Professor R. L. SCHUYLER  
4:30-5:45 p. m., Monday and Thursday. Room 716 Hamilton Fee \$24 each Session

In the medieval period attention is concentrated upon those events and tendencies that help to explain the development of modern England, especially upon the formation and growth of the constitution. In the modern period social, industrial, and intellectual factors are considered, and stress is laid upon constitutional progress and the evolution of the British Empire.

Text: Cross, *A Shorter History of England and Greater Britain*.

**History e103-104—The history of the Eastern question.** Lectures and conferences. Credit II. 3 points each Session. Fee \$24 each Session. Mr. V. H. KALENDERIAN

Section 1—4:30-6 p. m. Tuesday. Room 301 Mines

Section 2—7:30-9:10 p. m., Tuesday. Room 301 Mines

This course deals with the origin and development of the Ottoman Empire and its relations with the nations of Europe. It includes: a brief survey of the Byzantine and Latin empires; the Turkish Conquest and its influence on successive phases of European diplomacy up to the close of the eighteenth century; Napoleon's Oriental project; the partition of the Ottoman Empire during the nineteenth and early twentieth centuries and the bearing of this process upon European international politics. Stress is laid, also, upon racial characteristics and upon religious, social, and economic conditions. The year 1856 will be the dividing point between the first and second semesters.



**History e123-124—Europe in the Middle Ages, 300-1500.** Credit I, II. 3 points each Session. Professor A. P. EVANS

7:30-9:10 p. m., Friday. Room 717 Hamilton. Fee \$24 each Session

This course deals with the period when the foundations of the institutions and ideas of modern Europe were laid. After discussing briefly the causes of the decay of the Roman Empire, it will describe the establishment of barbarian kingdoms upon the ruins of that Empire and trace their evolution through the feudal age to the beginnings of the present national states of Europe. The course treats also of the growth and organization of the Christian Church and its influence upon the institutions, thought and culture of Europe; Mohammed and the Saracen civilization; early methods of agriculture and industry; the manorial and gild system; the rise of towns and the development of commerce; the universities and the revival of learning, art, literature and science; and the initial discoveries overseas which mark the opening of the modern age.

**History e125—History of Russia.** Lecture-study course. Credit II. 3 points Winter Session. Professor J. D. PRINCE

4-5:40 p. m., Wednesday. Room 302 Mines. Fee \$24

The work will cover a careful treatment of Russian history from the earliest times to the modern period, with a discussion of the attitude of Russia during the world war and the revolution, and a brief survey of its political development. Special native lecturers will address the class on modern Russian political thought. In connection with this work should be noted the following course which stands in close relation to the history of Russia and is a desirable supplement in order to understand Russian development.

**History e126—History of Poland, Czecho-Slovakia (Bohemia), Serbia and Bulgaria.** Credit II. 3 points Spring Session. Professor J. D. PRINCE

4-5:40 p. m., Wednesday. Fee \$24

The work will be supplemented by special lectures given by native experts on the present situation in the new Slavonic states of Poland, Czecho-Slovakia, and the Kingdom of the Serbs and Croats.

**History e155-156—Social and economic forces in European history since the revolutionary movements of 1848.** Credit II. 3 points each Session. Mr. E. M. EARLE

9:10-10:50 a. m., Saturday. Room 615 Kent. Fee \$24 each Session

A survey of the internal problems of the European nations, with special emphasis upon the importance of social and economic factors in the determination of national and international policies. Among the specific topics which will be discussed at some length are: the industrial revolution on the continent; the nationalistic movements and their effect upon industrial and commercial policies; the economic basis for the foundation and platforms of political parties; the rise of capitalistic imperialism; military and economic preparedness as a cause and an effect of commercial and capitalistic imperialism. The causes of the Great War will be considered in the light of domestic as well as international conditions.

**History e161-162—Social and industrial history of the United States.** Credit II. 3 points each Session. Professor B. B. KENDRICK

7:30-9:10 p. m., Wednesday. Room 703 Hamilton. Fee \$24 each Session

This course studies the origin and development of current social and industrial conditions in the United States. Among the topics treated are the beginnings of America as a part of the overseas expansion of Europe; development of an American people, their distinctive traits and ideals; agricultural progress; age of machinery, power, and applied science, revolutionizing modern society; rise and inter-relation of great industrial and transportation systems; labor and agrarian problems; modern democracy, its progress and phases in the United States. The Civil War will form the dividing point between the first and second terms.

**History e165-166—The recent history of the United States.** Lectures, readings and discussion. Credit II. 3 points each Session. Professor D. S. MUZZEY

11 a. m.—12:40 p. m., Saturday. Room 615 Kent. Fee \$24 each Session

This course will deal with the history of the United States during the last quarter of a century. It will emphasize first of all the problems raised in our political and economic life by the entrance of our country into world politics. The theories of "new nationalism" and "new democracy" will be discussed in their bearing on our inherited institutions and in their implications for our future development.

**History e177—Latin America: resources; industry; transportation; commerce.** Credit II, IX. 3 points Winter Session. Dr. W. E. AUGHINBAUGH  
7:30-9:10 p. m., Monday. Room 615 Kent. Fee \$24

This course, followed by History e178, aims to supply the knowledge and cultivate the attitude of mind which may enable Americans to understand Latin-Americans, appreciate their circumstances, work with them along the lines of material and intellectual progress, and contribute in general to the promotion of inter-American friendship and commerce.

**History e178—Latin America: social and political institutions.** Credit II, IX. 3 points Spring Session. Professor H. E. BOLTON  
7:30-9:10 p. m., Monday. Fee \$24

For description see History e177.

### **Household Arts, see pp. 142-149**

#### **HYGIENE**

**For Courses in Physical Education, see pp. 106, 153-155; and for other courses in Hygiene, see pp. 136, 137**

**Hygiene e1—Hygiene and sanitation.** Credit I, IV. 3 points Winter Session. Professor E. S. ELLIOTT

5-6:15 p. m., Monday and Thursday. Room 517 Hamilton. Fee \$24

Winter Session—Health and disease in terms of general biology; history and development of hygiene and sanitation. Mortality and morbidity rates; causes of death—old age, violence, disease; modern theory of disease. Infectious diseases; sources of disease; disease carriers—man, animals, insects, air, water, fomites. Prophylaxis; physiological defences of human body; immunity; vaccination; sero-therapy. Isolation; quarantine; disinfection. Food inspection; waste disposal. Industrial hygiene; school hygiene. National, state and municipal health agencies.

**Hygiene e2—Personal hygiene and first aid.** Credit I, IV. 3 points Spring Session. Professor E. S. ELLIOTT

5-6:15 p. m., Monday and Thursday. Fee \$24

Spring Session—Significance of health, constitution, vital resistance. Relation of personal habits to morbidity and mortality. Health fads. Hygiene of nutrition, exercise, excretion, bathing, clothing, mind, and rest. First aid: hemorrhage, bruises, wounds, burns, sprains, dislocations, fractures; foreign bodies in eye, ear, nose, throat; poisons and their antidotes; asphyxia and drowning.

### **Industrial Arts, see p. 149**

#### **International Law**

**See Government and Public Law, pp. 83-86**

#### **International Relations**

**See Government and Public Law, pp. 83, 86**

**Italian, see p. 114**

## **JAPANESE**

**Japanese e1-2—Japanese history and culture.** 2 points each Session.  
Mrs. ETSU INAGAKI SUGIMOTO

7-9 p. m., Wednesday. Room 409 Avery. Fee \$16 each Session

General survey of history, religion and customs stretching over 2500 years, from the mythological period to the present time; theories of the origin of the people; duties of the ancient priesthood, and its identity with affairs of state; introduction of Buddhism and its influence upon national ideals; rise of Feudalism; the Dual Government; the sudden opening of the long-closed door and Japan's rapid march forward through a tangle of blunders into the problems of today.

These lectures are designed for those who are interested in the promotion of mutual understanding between Occident and Orient. While they will touch upon national affairs, their intention is rather to treat of the commonplace, everyday customs which, in Japan, are so peculiarly and subtly interwoven with tradition and ideals that only through an understanding of these, can an outsider see into the real heart of the people.

An opportunity for questions will be given at the close of each lecture.

## **JOURNALISM**

**See also German eJ1-J2, Readings in newspapers and magazines, p. 81**

**Journalism e1—General popular science.** Credit I, IV. 3 points Winter Session. Mr. J. C. MORRELL

4:30-5:45 p. m., Monday and Wednesday. Room 311 Havemeyer. Fee \$24

A lecture course on the inorganic sciences, especially chemistry and physics, given in a popular style, liberally illustrated with experiments and specimens from the Chandler Museum. The important elements and their compounds, together with their physical and chemical properties and uses, will form the foundation of the course. Scientific development will be accentuated and typical industrial processes will be treated in a concise manner.

**Journalism e2—General science.** Credit I, IV. 3 points Spring Session. Professor H. E. CRAMPTON

4:30-5:45 p. m., Tuesday and Friday. Fee \$24.

A lecture course treating of the history and principles of biological sciences, especially zoology, anthropology and evolution. Both Journalism e1 and e2 are required of students who matriculate in the School of Journalism.

## **LATIN**

**For a course in Linguistics, see p. 96**

**Latin eX1-X2—Elementary Latin and Cæsar.** Credit I in Columbia College; IV. 3 points each Session. Dr. HELEN MCCLEES

4:30-5:45 p. m., Tuesday and Friday. Room 501 Hamilton. Fee \$24 each Session.

The aim of this course is to impart knowledge of the elements of Latin and to develop the power to understand and translate Latin of average difficulty with ease and accuracy. To this end there will be a thorough study of forms, vocabulary, idioms and elementary syntax, together with extensive practice in reading, and constant drill, oral and written, in simple Latin composition.

No previous knowledge of Latin is required.

Latin eX1-X2, if followed by Latin eX3, prepare for comprehensive Latin 2.



**Latin eX3—Cæsar, Nepos and prose composition.** Credit I in Columbia College if offered in conjunction with Latin eX1 or eX8; IV. 3 points Winter Session. Dr. S. B. MURRAY, Jr.

4:30-6 p. m., Monday and Thursday. Room 518 Hamilton. Fee \$24

This course, given in the Winter Session, is planned for students who have studied Latin one year, and for those who wish to review the work of the second year of high school.

This course prepares for Comprehensive Latin 2.

**Latin eX8—Elementary course.** Credit I in Columbia College if offered in conjunction with Latin eX2 or eX3; IV. 3 points Spring Session. Dr. S. B. MURRAY, Jr.

4:30-6 p. m., Monday and Thursday. Fee \$24

A course for beginners.

Latin eX1 given in the Spring Session.

**Latin eY1—Ovid and Vergil.** Credit I in Columbia College;<sup>1</sup> IV. 3 points Winter Session. Dr. S. B. MURRAY, Jr.

4:30-6 p. m., Tuesday and Friday. Room 518 Hamilton. Fee \$24

This course prepares for the Latin examination known as Q (old plan). If taken with Latin eY3 (or eY4) and eY5 (or eY6) it prepares for comprehensive Latin 4.

**Latin eY3—Cicero and Sallust.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY5 or eY6. 3 points Winter Session. Dr. HELEN McCLEES

6:45-8:15 p. m., Monday and Thursday. Room 518 Hamilton. Fee \$24

This course prepares for the Latin examination known as P (old plan). If taken with Latin eY5 (or eY6) it prepares for comprehensive Latin 3.

**Latin eY4—Cicero and Sallust.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY5 or eY6. 3 points Spring Session. Dr. S. B. MURRAY, Jr.

4:30-6 p. m., Tuesday and Friday. Fee \$24

Latin eY3 given in the Spring Session.

**Latin eY5—Latin prose composition.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY3 or eY4. 2 points Winter Session. Dr. C. W. KEYES

2:10-3 p. m., Monday and Wednesday. Room 706 Philosophy. Fee \$16

This course is designed to give a thorough review of the material which is ordinarily included in the high school course in prose composition.

Prerequisite: Latin eX1-X2 or the equivalent.

This course prepares for the Latin examination known as 6 (old plan).

**Latin eY6—Latin prose composition.** Credit I in Columbia College;<sup>1</sup> IV, if offered in conjunction with Latin eY3 or eY4. 2 points Spring Session. Dr. C. W. KEYES

2:10-3 p. m., Monday and Wednesday. Fee \$16

Latin eY5 repeated in the Spring Session.

<sup>1</sup> To secure this credit all three courses, Latin eY1 or eY8, eY3 or eY4, eY5 or eY6, or their equivalents in the Summer Session, must be offered.



**Latin eY8—Ovid and Vergil.** Credit I in Columbia College; <sup>1</sup> IV. 3 points Spring Session. Dr. HELEN McCLEES

6:45–8:15 p. m., Monday and Thursday. Fee \$24

Latin eY1 repeated in the Spring Session.

**Latin e13—Selections from Latin poetry,** ranging from Ennius to Boethius, with a few popular songs and hymns of the middle ages. Credit I, IV. 3 points Winter Session. Dr. META GLASS

3:10–4:25 p. m., Tuesday and Friday. Room 501 Hamilton. Fee \$24

Prerequisite: 4 units of Elementary Latin or the equivalent.

**Latin e14—Tacitus, Agricola (life of a governor of Britain), Germania (manners and customs of the Germans), selections from the Histories IV–V (an uprising in the Rhineland).** Credit I, IV. 3 points Spring Session. Dr. META GLASS

3:10–4:25 p. m., Tuesday and Friday. Fee \$24

This course covers in suggestive outline Roman rule in Britain, Gaul, and on the Rhine, giving attention to the permanent Roman influences, potent in modern, as well as in medieval, history. Care will be taken to show in advance from day to day by what methods one may grasp the meaning in the Latin, and daily gain in reading power.

Prerequisite: 4 units of Elementary Latin or the equivalent.

**Latin e161–162—Early Christian archaeology.** Credit II. 3 points each Session. Dr. S. B. MURRAY, JR.

3:10–4:25 p. m., Monday and Friday. Room 302 Philosophy. Fee \$24 each Session

Lectures, reports and required reading. A critical study of the frescoes, mosaics, illuminated manuscripts, sculpture, and architecture of the early church. Special attention will be given to the transformation produced by Christianity in the types, traditions, and spirit of classic art, and to the formation of Christian iconography, as historical evidence bearing upon the development of the Christian church and doctrine.

Extension students who are qualified will also be admitted to the following courses:

**Latin 149—Introduction to Roman art and archaeology.** Credit II. 3 points Winter Session. Dr. S. B. MURRAY, JR.

3:10–4:25 p. m., Tuesday and Thursday. Room 712 Philosophy. Fee \$24

Lectures, reports and required reading. A systematic study of the last phase of classic art as presented by Roman sculpture and painting, and of the elements of Roman architecture, with preliminary consideration of the Hellenistic and Etruscan influences.

**Latin 151—Roman epigraphy.** Introduction to the study of Latin inscriptions. Credit II. 3 points Winter Session. Professor J. C. EGBERT

1:10–3 p. m., Thursday. Room 713 Philosophy. Fee \$24

Lectures, discussions, and outside work consisting of the reading of printed inscriptions, the study of original inscriptions, and the preparation of papers upon special topics.

<sup>1</sup> To secure this credit all three courses, Latin eY1 or eY8, eY3 or eY4, eY5 or eY6, or their equivalents in the Summer Session, must be offered.

**Latin 152—Roman epigraphy.** Official and sepulchral inscriptions. Credit II. 3 points Spring Session. Professor J. C. EGBERT  
1:10-3 p. m., Thursday. Fee \$24

Prerequisite: Latin 151 or its equivalent.

The general plan and scope of the work will be the same as in Latin 151.

**Latin 156—Topography and monuments of Rome and Pompeii.** Credit II. 3 points Spring Session. Dr. S. B. MURRAY, Jr.  
3:10-4:25 p. m., Tuesday and Thursday. Fee \$24

Lectures, reports and required reading. A critical study of Pompeii as a Hellenistic city in Italy, and of the origins, development, and monuments of Roman architecture, together with their historical relation.

**Latin 203-204—Latin literature of the Empire.** Credit II. 3 points each Session. Professor D. R. STUART  
10 a. m.-12 m., Saturday. Room 706 Philosophy. Fee \$24 each Session

Lectures, readings and discussions

The classroom work will be chiefly concerned with the following authors: Vergil, Horace, Tibullus, Propertius, Ovid, Livy, Seneca, Martial, Tacitus, Juvenal, Pliny the Younger, Apuleius, Prudentius. They will be discussed, partly as reflecting the Roman outlook upon life, partly in their relation to modern literature and thought.

Those who expect to take this course will find it helpful to read in advance, if possible portions of the authors mentioned above. A list of the readings may be had upon application to the instructor.

## LAW

For courses in Latin-American commercial law, see Business e67-68, p. 43; Argentine law, see Business e67a-68a, p. 43; Commercial law for engineering students, see Business e70, p. 44; Contracts, see Business e73, e74, p. 44; Second year business law, see Business e75-76, p. 44

**Law e2—Admiralty law.** Credit VII. 2 points Spring Session. Professor GEORGE DEFOREST LORD  
4:30-5:20 p. m., Wednesday and Friday. Fee \$16

This course will be devoted to the study of the principal doctrines of admiralty law and will take up admiralty jurisdiction, salvage, general average, contracts of affreightment, charter parties and bills of lading, with a view to a practical as well as theoretical solution of the questions arising thereunder. A certain amount of admiralty pleading and practice will be taught in addition to the substantive law.

**Law eX3—Legal practice.** 3 points Winter Session. Mr. H. R. MEDINA  
8:20-10 p. m., Monday. Room 411 Kent. Fee \$24

This course is offered primarily for students who have completed their law course and are beginning the active practice of their profession. The aim of the course is to aid the student who has received thorough training in legal theory to study its application in practice more systematically than is possible in the modern law office.

The work will include not only such practical matters as the formation of corporations and partnerships, the drafting of the more usual forms of commercial contracts, the probate of wills and other steps in the administration of the estates of decedents, but also a discussion of the practical problems of law office organization and the conduct of litigation, preparation for trial, the actual trial of cases, the drawing of practice papers, etc., etc.

Text-book: Bostwick's *Lawyers' Manual* (2d edition).

**Law eX4—Spanish-American civil law.** 2 points Spring Session. Mr. E. GIL

7:40-9:10 p. m., Tuesday. Fee \$16

This course will be devoted to the correlated study of the fundamental doctrines embodied in the civil codes of Argentina and Brazil. Special attention will be given to those legal questions arising in civil and international relations between the United States and the Spanish-American countries.

Typewritten synopsis of lectures prepared by the instructor and assigned reading.

Text-books: Argentine Civil Code, Civil Code of Brazil.

Reference books: Walton's *Civil Law in Spain and Spanish America*; Sherman's *Roman Law in the Modern World*, Vol. II; Holland's *Jurisprudence*, 11 ed.; Charles F. Beach's *Civil Law in America*.

**Law eX5—Patent law.** 2 points Winter Session. Mr. E. N. CURTIS

7:40-9:20 p. m., Monday. Room 603 Hamilton. Fee \$16

This course deals with the principles of patent law and practice and procedure in the United States Patent Office and federal courts in patent causes.

It is designed not only for law students desiring to follow this branch of the profession, but also for inventors and those intending to enter engineering or technical pursuits where questions relating to inventions and patents are likely to arise.

**Law eX6—Trade-marks, unfair competition and copyrights.** 2 points Spring Session. Mr. E. N. CURTIS

7:40-9:20 p. m., Monday. Fee \$16

This course covers the basic principles of the law of trade-marks and unfair competition, and the law of copyrights, together with practice and procedure relating thereto.

It is designed not only for law students who intend to specialize in these branches, but also for those engaging in business or literary pursuits where a knowledge of these matters is valuable or desirable.

## LINGUISTICS

**Linguistics e102—Methods of learning and teaching languages.** Lecture-study course. Credit II. 3 points Spring Session. Professor J. D. PRINCE

4-5:40 p. m., Friday. Fee \$24

This course will consist of a series of lectures on the origin and history of language and the best scientific methods of acquiring practical knowledge of the various classes of human speech.

## MATHEMATICS

**For a course in Industrial Mathematics, see p. 137**

**Mathematics eX1—Algebra, elementary and intermediate course** (complete). 4 points Winter Session. Professor M. A. NORDGAARD

6:10-7 p. m., Monday, Tuesday, Thursday, and Friday. Room 203 Hamilton. Fee \$32

This course reviews elementary algebra to and beyond quadratics. It includes the fundamental operations, factoring, fractions, ratio and proportion, quadratics, binomial theorem (simple forms), progressions and graphical methods. *It is not open to beginners.*

**Mathematics eX2—Algebra, elementary and intermediate course** (complete). 4 points Spring Session. Professor M. A. NORDGAARD

7:20-8:10 p. m., Monday, Tuesday, Thursday, and Friday. Fee \$32

Course eX1 repeated in the Spring Session.



**Mathematics eX3—Algebra, elementary course.** 3 points Winter Session.

Fee \$24

Section 1—7-8:15 p. m., Monday and Thursday. Room 213 Hamilton. Professor J. A. NORTHCOTT

Section 2—8:20-9:35 p. m., Tuesday and Friday. Room 213 Hamilton. Professor J. A. NORTHCOTT

This course, planned for beginners, covers elementary algebra to quadratics.

**Mathematics eX4—Algebra, elementary course.** 3 points Spring Session.

Fee \$24

Section 1—7-8:15 p. m., Tuesday and Friday. Professor J. A. NORTHCOTT

Section 2—8:20-9:35 p. m., Monday and Thursday. Professor J. A. NORTHCOTT

Mathematics eX3 repeated in the Spring Session.

**Mathematics eX5—Algebra, intermediate course.** 3 points Winter Session. Fee \$24

Section 1—4:30-5:45 p. m., Tuesday and Friday. Room 202 Hamilton. Mr. O. W. ANTHONY

Section 2—8:20-9:35 p. m., Monday and Thursday. Room 202 Hamilton. Professor J. A. NORTHCOTT

Section 3—7-8:15 p. m., Tuesday and Friday. Room 202 Hamilton. Professor J. A. NORTHCOTT

This course is planned especially for students who have had a course in elementary algebra to quadratics. The work will begin with a brief review of the more important topics of elementary algebra and proceed to the study of quadratic equations, the binomial theorem and the progressions.

**Mathematics eX6—Algebra, intermediate course.** 3 points Spring Session. Fee \$24

Section 1—4:30-5:45 p. m., Monday and Thursday. Mr. O. W. ANTHONY

Section 2—8:20-9:35 p. m., Tuesday and Friday. Professor J. A. NORTHCOTT

Section 3—7-8:15 p. m., Monday and Thursday. Professor J. A. NORTHCOTT

Mathematics eX5 repeated in the Spring Session.

**Mathematics eY1—Plane geometry (complete).** 4 points Winter Session. Fee \$32

Section 1—7:20-8:10 p. m., Monday, Tuesday, Thursday and Friday. Room 203 Hamilton. Professor M. A. NORDGAARD

Section 2—5:10-6 p. m., Monday, Tuesday, Thursday and Friday. Room 203 Hamilton. Mr. H. M. HOVEY

The five books on plane geometry, including rectilinear figures, the circle, proportion areas of polygons, regular polygons and circles.

**Mathematics eY2—Plane geometry.** 4 points Spring Session. Fee \$32

Section 1—6:10-7 p. m., Monday, Tuesday, Thursday, Friday. Professor M. A. NORDGAARD

Section 2—7:20-8:10 p. m., Monday, Tuesday, Thursday, Friday. Mr. V. S. MALLORY

Mathematics eY1 repeated in the Spring Session.



**Mathematics eA1—Trigonometry.** Credit I, IV. 2 points Winter Session. Fee \$16

Section 1—4:30–5:20 p. m., Tuesday and Friday. Room 213 Hamilton. Mr. J. A. SWENSON

Section 2—7:20–8:10 p. m., Tuesday and Friday. Room 213 Hamilton. Mr. B. C. KEELER

Section 3—8:20–9:10 p. m., Monday and Thursday. Room 203 Hamilton. Mr. A. L. WECHSLER

Section 4—5:10–6 p. m., Monday and Thursday. Room 202 Hamilton. Mr. R. F. CLARK

The subject-matter of this course includes trigonometric functions, circular measure, relations between the functions, functions of several angles, inverse functions, trigonometric equations, logarithms, solution of triangles.

Mathematics eX5 or its equivalent is presupposed.

**Mathematics eA2—Solid geometry.** Credit I, IV. 3 points Spring Session. Dr. J. DOUGLAS

4:30–5:45 p. m., Tuesday and Friday. Fee \$24

Mathematics eA3 repeated in the Spring Session.

**Mathematics eA3—Solid geometry.** Credit I, IV. 3 points Winter Session. Mr. I. KORAL

7–8:15 p. m., Tuesday and Friday. Room 214 Hamilton. Fee \$24

In addition to the usual theorems on lines, planes and solids, the geometry of the sphere, and the development of space intuition, this course lays special stress upon the purely logical side of the subject and the nature of mathematical proof.

Plane geometry is presupposed.

The above course is equivalent to Mathematics A2 or A3 in the *Announcement of Columbia College*.

**Mathematics eA4—Trigonometry.** Credit I, IV. 2 points Spring Session. Fee \$16

Section 1—4:30–5:20 p. m., Monday and Thursday. Mr. J. A. SWENSON

Section 2—7:20–8:10 p. m., Monday and Thursday. Mr. B. C. KEELER

Section 3—8:20–9:10 p. m., Tuesday and Friday. Mr. A. L. WECHSLER

Mathematics eA1 repeated in the Spring Session.

**Mathematics e1—Algebra.** Credit I, IV. 3 points Winter Session. Fee \$24

Section 1—7–8:15 p. m., Monday and Thursday. Room 202 Hamilton. Mr. J. M. BIRD

Section 2—4:30–5:45 p. m., Monday and Thursday. Room 213 Hamilton. Dr. J. DOUGLAS

This course is designed for students who desire to continue with such more advanced topics as permutations and combinations, determinants with applications to the solutions of linear equations, complex numbers, theory of equations, with reference to the solution of numerical equations of higher degree, undetermined coefficients involving the use of finite series, and partial fractions.

Mathematics eA1 or its equivalent is presupposed.

Equivalent to Mathematics 1 in the *Announcement of Columbia College*.

**Mathematics e2—Algebra.** Credit I, IV. 3 points Spring Session. Mr. I. KORAL

7-8:15 p. m., Monday and Thursday. Fee \$24

Mathematics e1 repeated in the Spring Session.

**Mathematics e3—Analytical geometry.** Credit I, IV. 3 points Winter Session. Dr. K. W. LAMSON

7-8:15 p. m., Monday and Thursday. Room 214 Hamilton. Fee \$24

Introduction to algebraic geometry, dealing with such topics as coördinate systems, transformations, loci and their equations, the straight line, circle, parabola, ellipse, hyperbola, the geometric interpretation of the general equation of second degree and the elements of three-dimensional geometry.

Mathematics eA1 or e1 or their equivalents are presupposed.

Equivalent to Mathematics 3 or 4 in the *Announcement of Columbia College*.

**Mathematics e4—Analytical geometry.** Credit I, IV. 3 points Spring Session. Mr. J. M. BIRD

7-8:15 p. m., Monday and Thursday. Fee \$24

Mathematics e3 repeated in the Spring Session.

**Mathematics e55-56—Calculus.** Credit I, IV. 3 points each Session. Professor G. W. MULLINS

7-8:15 p. m., Tuesday and Friday. Room 303 Hamilton. Fee \$24 each Session

The notions and operations of function, differentiation, and integration are presented with applications to geometry, physics, and mechanics.

Mathematics e3 or its equivalent is presupposed.

Equivalent to Mathematics 55-56 in the *Announcement of Columbia College*.

**Mathematics e58—Calculus.** Credit I, IV. 3 points Spring Session. Dr. K. W. LAMSON

7-8:15 p. m., Tuesday and Friday. Fee \$24

Mathematics e55 repeated in the Spring Session.

## MINERALOGY

**Mineralogy e3—Gems and precious stones.** 2 points Winter Session. Mr. H. P. WHITLOCK

Two two-hour sessions. Time to be arranged. Fee \$16

The course is intended to develop the methods of testing and to give practice in determination of the principal types. Advantage is taken of the splendid collections of the American Museum and of the Egleston collections at Columbia.

**Mineralogy e6—Methods of mineral determination with the microscope.** 2 points Spring Session. Professor L. MCL. LUQUER and Mr. C. W. GREENLAND

Two two-hour sessions. Time to be arranged. Fee \$16

The methods given special attention are those used with rock powders or minute fragments with the microscope and those applicable to opaque ores in polished plates. The course is open to those who have had a general course in Mineralogy.

## MUSIC

See also pp. 150, 151

*Chapel Choir*

Women students to the number of twenty who are approved by the Director of Church and Choral Music and are willing to give regular attendance in the Chapel Choir for the Sunday afternoon services (excepting on the first Sunday of each month) will receive a refund of their tuition fees to the amount of \$50. Applications may be made in Room Q Earl Hall, from 10:30 a. m. to 12 m. on and after September 26

**Music e7-8—Elementary harmony.** Credit I, IV. 3 points each Session. Messrs. S. BINGHAM and B. W. HOUGH

4:10-5 p. m., Tuesday and 4:10-5:50 p. m., Wednesday. Room 701 Journalism. Fee \$24 each Session

**Music e9-10—Advanced harmony.** Credit I, IV. 3 points each Session. Messrs. S. BINGHAM and B. W. HOUGH

2:10-3 p. m., Monday, Wednesday, and Friday. Room 701 Journalism. Fee \$24 each Session

**Music e31-32—University Orchestra.** Credit I, IV. 1 point each Session, if taken in conjunction with another course in music. Mr. H. DITTLER

8-10 p. m., Wednesday. Room 701 Journalism. Fee for University students expecting credit, \$8 each Session. Others desiring to take this course without credit may do so upon the payment of the fee of \$6, payable in advance for the year. There is no University fee for this course.

**Music e33-34—University Chorus.** Credit I, IV. 1 point with special arrangement if taken in conjunction with another course in music. Professor WALTER HENRY HALL

8:15-9:45 p. m., Tuesday. Earl Hall. Fee for University students expecting credit, \$8; otherwise no charge, excepting for music used. There is no University fee for this course.

It is expected that concerts will be given during the year, when the University Chorus will join with that of Brooklyn (Brooklyn Oratorio Society), forming a large festival chorus. Students will be allowed to become members of this chorus only after application to Professor HALL, and after a voice trial.

**Music e35-36—Violin playing.** Credit I when taken with a theoretical course in music. Mr. H. DITTLER

Hours to be arranged. Room 703 Journalism. Special fee \$45 each Session. Not charged at \$8 per point

Individual instruction will be given in the technique of the instrument and in interpretation.

**Music e37-38—Ensemble playing.** Credit I when taken with a theoretical course in music. Mr. H. DITTLER

Hours to be arranged. Room 701 Journalism. Special fee \$25 each Session. Not charged at \$8 per point

Coaching in chamber music for string players and pianists. The purpose of this course will be to acquaint students with standard masterpieces of musical literature, as well as to give them personal training.

**Music e39-40—Organ course.** Mr. DAVID MCK. WILLIAMS

Hours to be arranged

Private lessons. Special fee \$75 each Session. Not charged at \$8 per point

This course will include a weekly class lesson, or lecture recital, at which Mr. WILLIAMS will discuss the interpretation of the works of representative organ composers.

For full details in regard to this course, apply to Professor WALTER HENRY HALL, Room Q, Earl Hall, 11-11:30 A.M. daily, except Saturday.

**Music e41a, b, c-42a, b, c—Vocal training.** Sr. L. PARISOTTI

Hours to be arranged. 21 Claremont Avenue

e41a-42a, course of twenty private lessons, special fee \$50. Not charged at \$8 per point

e41b-42b, course of forty private lessons, special fee \$85. Not charged at \$8 per point

e41c-42c, course of twenty class lessons, four in a class, special fee \$25. Not charged at \$8 per point

These lessons include: 1. Natural breathing adapted to the functions of the vocal apparatus. 2. Rules for the natural production and development of vocal sounds and their qualifications for tonal effects. 3. Coordination of the speaking action to the functions of the sounding and resounding organs. 4. Practical suggestions for expression.

**Music e105—History of music.** Credit II. 3 points Winter Session. Professor J. B. BECK

4:10-5 p. m., Monday. Room 604 Journalism. Fee \$24

The origin and gradual evolution of music in all its forms, vocal and instrumental, from prehistoric times to the present.

This course aims at following the organic evolution of music as a part of civilization. Its correlation to literature and arts will be illustrated by references to related works and comparative analysis of them. The extensive collection of photographic material of the instructor will be available to the students, and, as much as possible, the evolution of music will be studied from the original documents, thus giving the students an opportunity to understand at the same time the material evolution of musical notation and the development, step by step, of the various forms of musical compositions from the songs and tunes of the primitives to the compositions of modern masters.

**Navigation, see astronomy e3, e4, p. 32**

**NEUROLOGY**

**Neurology e223-224—Neuro-anatomy.** The anatomy, histology, development and architectonics of the nervous system of man. Lectures, demonstrations, conferences, and laboratory work. Credit II, VI. 3 points each Session. Professors F. TILNEY, A. ELWYN and Dr. O. C. PERKINS

7-10 p. m., Tuesday. Neurologic Laboratory, College of Physicians and Surgeons, 437 West 59th Street. Fee \$24 each Session

This course is intended primarily for physicians, psychologists, and advanced students in medicine and zoology. The essentials of the structure of the nervous system will be presented, with special reference to the interpretation of the integrative action and functional control vested in the brain and spinal cord. The aim will be to supply an adequate morphologic basis to those concerned mainly with its function and its organic disturbances.



**Neurology e225-226—Evolution of the nervous system.** Credit II, VI. 3 points each Session. Professors F. TILNEY, A. ELWYN and Dr. J. ROSETT 4-6 p. m., Wednesday. Neurologic Laboratory, College of Physicians and Surgeons, 437 West 59th Street. Fee \$24 each Session

Laboratory and lecture course.

**Nursing and Health, see pp. 152, 153**

### OPTICS AND OPTOMETRY

The University offers a two years' course in optics and optometry for students of optometry. A special circular describing these classes will be sent on application to the Secretary of the University.

### PERSONNEL MANAGEMENT

See **Business e31-32—Principles of personnel management, p. 39; Business e117—The psychology of advertising and selling, p. 46; Business e161-162—Personnel management—general course, p. 49; Business e163—Personnel methods for office executives, p. 49; Business e164—Personnel methods for institutions, p. 49; Psychology e145—Vocational and industrial psychology, p. 108**

### PHILOSOPHY

**Philosophy e1—Principles of science: methods, deductive and inductive logic.** Lectures, recitations, and individual consultations with the instructor. Credit I, IV. 3 points Winter Session. Fee \$24. Dr. T. MUNRO, Messrs. E. A. BURTT and H. PETERSON

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 602 Hamilton

Section 2—3:10-4:25 p. m., Tuesday and Friday. Room 503 Hamilton

Section 3—4:30-5:45 p. m., Monday and Thursday. Room 503 Hamilton

Section 4—4:30-5:45 p. m., Tuesday and Friday. Room 507 Hamilton

Section 5—8:20-9:35 p. m., Tuesday and Friday. Room 503 Hamilton

This course is a study of the theory and practice of accurate thinking with emphasis on the detection of typical errors in reasoning. The principles of inductive and deductive logic will be examined both as formal scientific methods and in relation to their historical and psychological development and background.

**Philosophy e2—Principles of science: concepts and problems of philosophy.** Lectures, recitations, and individual consultations with the instructor. Credit I, IV. 3 points Spring Session. Fee \$24. Dr. T. MUNRO, Messrs. E. A. BURTT and H. PETERSON

Section 1—3:10-4:25 p. m., Monday and Thursday

Section 2—3:10-4:25 p. m., Tuesday and Friday

Section 3—4:30-5:45 p. m., Monday and Thursday

Section 4—4:30-5:45 p. m., Tuesday and Friday

Section 5—8:20-9:35 p. m., Tuesday and Friday

In this course the scientific knowledge of the present day will be used as a basis of interpreting and criticizing fundamental philosophic conceptions of human nature and man's place in the universe.

**Philosophy e4—Principles of science; methods, deductive and inductive logic.** Credit I, IV. 3 points Spring Session. Mr. J. H. RANDALL, JR.

4:30-5:45 p. m., Tuesday and Friday. Fee \$24

Course e1 repeated in the Spring Session.

**Philosophy e5—Principles of science; concepts and problems of philosophy.** Credit I, IV. 3 points Winter Session. Mr. J. H. RANDALL, JR.

4:30-5:45 p. m., Tuesday and Friday. Room 503 Hamilton. Fee \$24

Course e2 given in the Winter Session.

**Philosophy e135—Radical, conservative, and reactionary tendencies in present-day morals.** Credit II. 3 points Winter Session. Professor W. P. MONTAGUE

7:40-9:30 p. m., Tuesday. Room 307 Philosophy. Fee \$24

The course is designed as an introduction to contemporary problems of social or institutional ethics. These problems arise in connection with the conflicting theories as to the true nature and value of the established institutions of human society. The work of the course will, therefore, consist in a general survey of the fundamental institutions or forms of social relationship, and of the problems and controversies related to each of them. The order of study will be as follows:

1. The political problem of the powers of the state (anarchism *vs.* governmentalism).
2. The international problem of the federation of the world (pacifism *vs.* militarism).
3. The industrial problem of the status of property (socialism *vs.* laissez-faire).

**Philosophy e136—Radical, conservative, and reactionary tendencies in present-day morals.** Credit II. 3 points Spring Session. Professor W. P. MONTAGUE

7:40-9:30 p. m., Tuesday. Fee \$24

This course is a continuation of Philosophy e135, but either course may be taken separately. The work is designed as an introduction to contemporary problems of social or institutional ethics. These problems arise in connection with the conflicting theories as to the true nature and value of the established institutions of human society. The work of the course will, therefore, consist of a general survey of the fundamental institutions or forms of social relationship, and of the problems and controversies related to each of them. The order of study will be as follows:

4. The educational problem of the purpose of the school (vocationalism *vs.* general culture).
5. The woman problem of the organization of the family (feminism *vs.* the claim of the home).
6. The religious problem of the ideal of the church (anti-clericalism *vs.* Christianity).

**Philosophy e137-138—The criteria of progress.** Credit II. 3 points each Session. Dr. T. MUNRO

4:30-6:10 p. m., Wednesday. Room 601 Hamilton. Fee \$24 each Session

A study of contemporary ideals and standards of value. The course includes an examination (1) of the theory of social progress; (2) of the process of conscious valuation and the nature of ethical criteria; (3) of the chief stages in the history of ideals, and (4) of the development and current meaning of the concepts of freedom, socialization, justice, democracy, altruism, egoism, quietism, control, power, adaptation, rationality, happiness, development, culture and pleasure.

These concepts are examined with instances of their actual operation as instruments in guiding conduct, and with a view to their bearing on the general problem of the formulation of human purposes.

**Philosophy e141-142—General esthetics.** Credit II. 3 points each Session.  
Dr. HELEN H. PARKHURST

7:40-9:30 p. m., Tuesday. Room 302 Philosophy. Fee \$24 each Session

In the Winter Session some of the psychological problems of esthetics will be considered, concluding with the various theories of the origins of art and of its relations to other life activities.

In the Spring Session the more philosophic aspects of the subject will be stressed. Definitions of the chief esthetic values—beauty, the tragic, the sublime, etc., will be suggested; and the formal principles of art, such as symmetry, rhythm, and climax will be discussed in their particular application to various arts.

**Philosophy e161-162—History of philosophy.** Credit II. 3 points each Session. Dr. W. F. COOLEY

4:30-6:10 p. m., Friday. Room 717 Hamilton. Fee \$24 each Session

In the Winter Session the genesis of the fundamental problems of thought, ethics, and religion and the treatment they received from ancient and medieval thinkers will be traced. The Spring Session will be devoted to the consideration of these problems from the point of view of the modern world.

Text-book: Rogers', *Student's History of Philosophy*.

**Philosophy e163-164—French philosophy and ideals.** Credit II. 3 points each Session. Mr. J. H. RANDALL, JR.

4:30-6:10 p. m., Thursday. Room 308 Philosophy. Fee \$24 each Session

Winter Session—Montaigne to the Revolution.

The development of the philosophic thought of the French people in its relation to the dominant intellectual, literary and social movements and ideals. The Renaissance, Cartesianism and the Classic Age, the radical movements and thought in the eighteenth century.

Spring Session—The Revolution to Syndicalism.

The development of the philosophic thought of the French people in its relation to the dominant literary and social movements and ideals. Romanticism and the humanitarian Utopians of Forty-Eight; Comte, Positivism and the philosophers of science; the Evolutionists, Fouillée, Guyau, Bergson; and the contemporary social and political philosophy.

**Philosophy e165-166—Romantic idealism in Germany, 1770-1830.** Credit II. 3 points each Session. Mr. H. L. FRIESS

7:40-9:30 p. m., Wednesday. Room 308 Philosophy. Fee \$24 each Session

Besides the formal systems of philosophy, the ideas expressed by the German poets of this period will be studied in so far as they are of philosophic interest, and the whole development of romantic idealism will be treated with reference to its social setting. Kant, Goethe, and Fichte will be studied in the Winter Session, the Romantic School and Hegel in the Spring Session.

**Phonetics (see pp. 68, 69, 73)**

## MOTION PICTURES AND PHOTOPLAY COMPOSITION

### PHOTOPLAY COMPOSITION

**Photoplay composition e1—Elementary course.** 3 points Winter Session. Fee \$24

Section 1—3:10-4:25 p. m., Tuesday. Room 509 Hamilton. Mrs. FRANCES TAYLOR PATTERSON

Section 2—7:45-9 p. m., Wednesday. Room 509 Hamilton. Mrs. FRANCES TAYLOR PATTERSON



Section 3—7:45-9 p. m., Tuesday. Room 509 Hamilton Mr. ROWLAND PATTERSON

This course is a practical course in professional continuity writing. It deals in general with the composition of cinematic plot as contrasted with dramatic and narrative plot. It takes up the main problems of presenting a story impressively through the medium of action. Special attention is paid to the principles of visual appeal, the effective use of motion-picture devices, the art of arousing and sustaining the spectator's interest, the creating of situations and crises, and the logic of emotionally satisfactory endings. Continuities and detailed synopses are prepared according to the current usage in the studios. Films are exhibited and analyzed before the class.

Each student is required to write continuity of at least one adaptation and one original photoplay.

Text-book: Patterson, *Cinema Craftsmanship*.

**Photoplay composition e2—Elementary course.** 3 points Spring Session.  
Fee \$24

Section 1—3:10-4:25 p. m., Tuesday. Mrs. FRANCES TAYLOR PATTERSON

Section 2—7:45-9 p. m., Wednesday. Mrs. FRANCES TAYLOR PATTERSON

Section 3—7:45-9 p. m., Tuesday. Mr. ROWLAND ROGERS

Identical with Photoplay composition e1, but offered in the Spring Session.

**Photoplay composition e3—Advanced course.** 3 points Winter Session.  
Mrs. FRANCES TAYLOR PATTERSON

7:45-9 p. m., Monday. Room 206 Journalism. Fee \$24

This course is intended for those who have had a foundation in the fundamental problems of plot building and continuity writing. It deals with the finer phases of character delineation, the dramatization of setting, symbolism and pictorial composition. Extended synopses of original stories are prepared in accordance with the demands of the photoplay market. Such questions as cinematic journalism, color, light and music in the photoplay, the field for educational films, the program system etc., are discussed before the class. Films are exhibited and analyzed from time to time.

Prerequisite: Photoplay composition e1, e3 or s2.

In certain exceptional cases the advanced course may be taken parallel with the elementary course.

**Photoplay composition e4—Advanced course.** 3 points Spring Session.  
Mrs. FRANCES TAYLOR PATTERSON

7:45-9 p. m., Monday. Fee \$24

Identical with Photoplay composition e3, but offered in the Spring Session.

## MOTION PICTURES

**Motion pictures e5—Production.** 3 points Winter Session. Mr. ROWLAND ROGERS

7:45-9 p. m., Tuesday. Room 206 Journalism. Fee \$24

An elementary course dealing with the principles underlying the production of motion pictures and their practical application by the director, camera man, title writer and editor.

A single reel picture will be produced by class members in studio and on location. This course should be preceded by or accompany Photoplay composition e1.

The course is designed to give a working knowledge of production methods. Methods of distributing and projecting motion pictures are briefly considered.

A one reel picture based on a scenario written by a student of the course in Photoplay composition will be produced.



## PHYSICAL EDUCATION

For courses in Hygiene, see p. 91,

(For men students only)

**Physical education eA1-A2—Gymnastics and games.** Credit I, IV. 2 points each Session. Messrs. C. J. MERNER and LLOYD C. COLSEY

8:30-9:20 p. m., Monday, Wednesday, and Thursday. University Gymnasium. Fee \$16 each Session

This course comprises free exercises with and without hand apparatus and chest-weight exercises; simple work on gymnastic apparatus, such as horizontal ladder, horizontal bar, ropes, buck, horse, etc., gymnasium games.

Students taking this course for credit in Columbia College will be required to attend one hour a week (hour to be arranged with the instructor) a course in hygiene and sanitation during the Winter Session and to pass an examination in swimming during the Spring Session.

**Physical education eW1-W2—Wrestling.** 2 points each Session. Fee \$16 each Session. Mr. A. PETERSON

Section 1—7:30-8:30 p. m., Thursday. University Gymnasium

Section 2—8:30-9:30 p. m., Thursday. University Gymnasium

**Physical education eY1-Y2—Swimming.** 2 points each Session. Fee \$16 each Session. Mr. E. T. KENNEDY

Section 1—8:30-9 or 9-9:30 p. m., Monday. University Gymnasium

Section 2—8:30-9 or 9-9:30 p. m., Wednesday. University Gymnasium

Section 3—8:30-9 or 9-9:30 p. m., Thursday. University Gymnasium

Students may receive instruction on either Monday, Wednesday, or Thursday, and will have the privilege of using the swimming-pool on the remaining evenings.

**Physical education eZ1-Z2—Boxing.** 2 points each Session. Fee \$16 each Session. Mr. G. WEEMAN

Section 1—7:30-8:30 p. m., Thursday. University Gymnasium

Section 2—8:30-9:30 p. m., Thursday. University Gymnasium

Students have the privilege of using the gymnasium and swimming pool Monday, Wednesday and Thursday evenings from 8 to 10 o'clock.

## PHYSICS

For courses in Practical Arts Physics, see p. 137

**Physics eA1-A2—Elementary course in general physics.** 3 hours' lectures and recitations, with 2 hours' laboratory work a week. Credit I, IV. 4 points each Session. Fee \$32 each Session. Professor L. B. MORSE and assistants

7:30-9 p. m., Monday and Thursday lectures. Room 304 Fayerweather. The laboratory work is done in sections of 12 students each, the number of sections and the hours depending upon the number registering for the course.

In 1920-1921 the sections met as follows:

Section 1—Monday, 5:30-7:30 p. m.

Section 2—Monday, 9-11 p. m.

Section 3—Tuesday, 1-3 p. m.

Section 4—Wednesday, 4-6 p. m.

Section 5—Thursday, 5:30-7:30 p. m.

Section 6—Thursday, 9-11 p. m.

In assigning students to laboratory sections preference will be given to those who register first.

An introductory course in physics for students who wish to become acquainted with the results, methods and spirit of the science, whether they intend to pursue its study further or wish an elementary knowledge of physics as a matter of general interest. A knowledge of elementary algebra and geometry is required. Trigonometry although desirable is not required.

Registration can be accepted only to the limit of the accommodations. Early registration and prompt attendance are advised for those who wish to avoid uncertainty.

**Physics eA4—Elementary course in general physics: mechanics, properties of matter and sound.** Same as eA1, but repeated in the Spring Session. 3 hours' lectures and recitations with 2 hours' laboratory work a week. Credit I, IV. 4 points Spring Session. Fee \$32

7:30-9 p. m., Tuesday and Friday, lectures  
Laboratory hours to be arranged.

As in Physics eA1-eA2 the registration will be limited to the accommodations.

## PHYSIOLOGY

**Physiology e1-2—Elementary mammalian physiology.** Lectures and practical exercises. Credit I, IV. 2 points each Session. Professor R. BURTON-OPITZ

1:45-4:30 p. m., Saturdays. Physiological Laboratory, College of Physicians and Surgeons, 437 West 59th Street. Fee \$16 each Session

This course is intended for students contemplating the study of medicine, or any of the biological sciences. It is also adapted to the needs of students of nursing and practical arts. The entire subject of physiology will be dealt with, but only in an elementary way in accordance with the number of hours assigned to the course. The lectures will be followed by practical work, such as may easily be performed by beginners.

An elementary knowledge of biology, chemistry and physics is desirable.

**Polish (see Slavonic, p. 121)**

**Politics (see Government and Public Law, pp. 83, 86)**

## PSYCHOLOGY

**Psychology e1—Elements of psychology.** Lectures, demonstrations, discussions and recitations. Credit I, IV. 3 points Winter Session. Fee \$24. Messrs. GARDNER MURPHY and H. E. JONES

Section 1—4:45-6 p. m., Monday and Thursday. Room 407 Schermerhorn

Section 2—4:30-5:45 p. m., Tuesday and Friday. Room 407 Schermerhorn

Section 3—7-8:15 p. m., Tuesday and Friday. Room 407 Schermerhorn

This is the basal course and covers the field of psychology as comprehensively as possible.

Instinct and emotion, sensation and perception, habit and memory, imagination, reasoning, will, and personality are the main topics.

**Psychology e1a—Continuation course in the elements of psychology.** Credit I, IV. 3 points Winter Session. Mr. GARDNER MURPHY

4:45-6 p. m., Monday and Thursday. Room 619 Schermerhorn. Fee \$24

A continuation of the work of Psychology e1 or e2a, with intensive study of important topics and much attention to practical applications.

**Psychology e2—Continuation course in the elements of psychology.** Credit I, IV. 3 points Spring Session. Fee \$24. Messrs. GARDNER MURPHY and H. E. JONES

Section 1—4:45-6 p. m., Monday and Thursday

Section 2—7-8:15 p. m., Tuesday and Friday

For description see Psychology e1a, of which this is a repetition in the Spring Session; especially intended for students who have taken Psychology e1.

**Psychology e2a—Elements of psychology.** Lectures, demonstrations, discussions and recitations. Credit I, IV. 3 points Spring Session. Fee \$24. Messrs. GARDNER MURPHY, H. E. JONES, and C. L. STONE

Section 1—4:45-6 p. m., Monday and Thursday

Section 2—4:30-5:45 p. m., Tuesday and Friday

Section 3—7-8:15 p. m., Tuesday and Friday

Psychology e1 repeated in the Spring Session.

**Psychology e3—Experimental psychology.** Lectures, readings and laboratory work. Credit I, IV. 3 points Winter Session. Mr. C. L. STONE

7-8:40 p. m., Tuesday and Friday. Room 407a Schermerhorn. Fee \$24

Affording laboratory training in experiments and mental tests, this course fits in well between the elementary course and the special and applied courses.

**Psychology e4a—Experimental psychology.** Credit I, IV. 3 points Spring Session. Mr. C. L. STONE

7-8:40 p. m., Tuesday and Friday. Fee \$24

Psychology e3 repeated in the Spring Session.

**Psychology e131-132—Mental hygiene.** Credit II. 3 points each Session. Dr. C. I. LAMBERT

5-6:40 p. m., Monday. Room 410 Mines. Fee \$24 each Session

The causes, treatment, prevention, and social significance of mental defects and disorders will be considered in a way to appeal specially to the social worker. Institutions will be visited, and an evening a month devoted to conferences and special lectures.

**Psychology e135—Clinical lectures in psychopathology.** Credit II. 3 points Winter Session. Dr. M. W. RAYNOR

1:45-3:30 p. m., Tuesday. At Manhattan State Hospital. Fee \$24

Clinical lectures on the more frequent mental disorders, with demonstration of cases showing reaction types. To reach the Manhattan State Hospital, students take the boat from the foot of East 116th St. for Ward's Island at 1:30 p. m.

The course is open to graduate students, and to others by special permission of the Department of Psychology.

**Psychology e136a—Clinical lectures in psychopathology.** Credit II. 3 points Spring Session. Dr. M. W. RAYNOR

1:45-3:30 p. m., Tuesday. At Manhattan State Hospital. Fee \$24

Psychology e135 repeated in the Spring Session.

**Psychology e145—Vocational and industrial psychology.** Credit II, IX. 3 points Winter Session. Professor A. T. POFFENBERGER, JR.

7:40-9:20 p. m., Wednesday. Special conferences will be arranged for students with practical and research problems. Room 407 Schermerhorn. Fee \$24



Psychological methods and principles applied to the problems of human engineering, in such fields as vocational guidance, the selection of employees, management and organization of personnel, industrial time and motion study, job-analysis, trade-testing, and the personal and environmental conditions of effective and satisfying work. Illustrated by concrete demonstrations and by the results of current studies in the field. This course may be appropriately followed by Business e118a or accompanied by Business e117.

**Psychology e146a—Vocational and industrial psychology.** Credit II, IX.  
3 points Spring Session. Professor A. T. POFFENBERGER, JR.  
4:30-6:10 p. m., Wednesday. Fee \$24

This course is identical with Psychology e145, but is given in the Spring Session and in the afternoon. It may be appropriately preceded by Business e117 or accompanied by Business e118a.

**Business e117—The psychology of advertising and selling.** Credit II, IX.  
3 points Winter Session. Fee \$24. Professor A. T. POFFENBERGER and Mr. P. S. ACHILLES

Section 1—4:30-6:10 p. m., Wednesday. Room 615 Kent

Section 2—7:40-9:20 p. m., Monday. Room 307 Philosophy

Application of psychological principles and experimental methods to the problems of appeal and response in advertising and selling. Analysis and evaluation of the methods and devices of publicity on the basis of (1) the known facts of human nature; (2) detailed examination of actual advertising campaigns and analysis of their results; (3) application of laboratory and statistical technique; and (4) comparative study of old and new methods of marketing. The material for the entire course is based on the findings of experimental investigation and the results of actual sales campaigns. Illustrated by lantern slides and current publicity materials. This course may be appropriately followed by Psychology e146a or accompanied by Psychology e145.

**Business e118a—The psychology of advertising and selling.** Credit II, IX. 3 points Spring Session. Fee \$24. Professor A. T. POFFENBERGER and Mr. P. S. ACHILLES

Section 1—4:30-6:10 p. m., Monday

Section 2—7:40-9:20 p. m., Wednesday

This course is identical with Business e117, but is given in the Spring Session. It may be appropriately preceded by Psychology e145 or accompanied by Psychology e146a.

**Psychology e165-166—Social psychology.** Credit II. 3 points each Session.  
Professor R. S. WOODWORTH

7-8:40 p. m., Monday. Room 407a Schermerhorn. Fee \$24 each Session

Course e165 will consider the instinctive basis of social behavior, the role of imitation and suggestion, of habit and of invention, and will attempt a psychological analysis of such social phenomena as fashion, loyalty, morale, unrest, radicalism and conservatism. Course e166 will examine the mental constitution of the social group, the distribution of intelligence and morality, the influence of heredity and environment, the mental status of delinquents and dependents and the question of sex, class and race differences in mental traits.

**Psychology e305-306—Seminar on contemporary problems in psychology.** Credit II. 3 points each Session. Professor H. L. HOLLINGWORTH  
7:40-9:20 p. m., Thursday. Room 407a Schermerhorn. Fee \$24 each Session

A group of related problems will be examined in the literature and by new investigation on the part of members of the Seminar. Admission by consent of the instructor.



## RELIGIOUS EDUCATION

The Department of University Extension in coöperation with the New York City Sunday School Association will offer courses in religious education during the academic year 1921-1922. They will be given on Monday evening at 8 p. m. from October to March, and will cover the work of a single term or Session. They are intended for officers and teachers of church schools of religion, directors of religious education, pastors, leaders of training classes, and students of education in general.

The courses will be accepted for matriculated students for the degrees of Columbia University only on the approval of the School and Department concerned. They lead also to the diploma of the International Sunday School Association. The subjects treated are Biblical history and literature, Educational theory, Supervision and management, Child study.

All students registered under the New York City Sunday School Association must pay a fee of \$4 for the course; all others and students who are allowed to count their courses for academic credit must pay at the rate of \$8 per point, and register in the Department of University Extension, Columbia University.

A circular giving details will be sent on application to the Secretary of Columbia University, or to the New York City Sunday School Association, 1 Madison Avenue.

Public Law (see pp. 85, 86)

## ROMANCE LANGAUGES

The attention of students in Romance Languages is called to the evening classes in Spoken Language described in a separate bulletin; also to the Announcement of the Division of Modern Languages for advanced courses; and to the class in Linguistics, p. 96.

All the courses in Romance Languages in University Extension are under the general supervision of Professor J. L. Gerig: office hours 4-4:30 p. m., Monday and Thursday, Room 506 Philosophy.

## FRENCH

*Departmental Representative:* Mr. L. FERARU. Office hours, 1:30-2 p. m., Monday and Thursday, Room 301 University Hall.

**French CA1-A2—Elementary course.** Credit I, IV. 4 points each Session. Fee \$32 each Session. Messrs. J. H. ENGLISH, L. FERARU, J. E. HARRIS, P. de LA ROCHELLE, A. P. SPRINGER, C. H. TUTT and F. N. VEXLER

Section 1—1:30-2:55 p. m., Monday, Wednesday and Thursday. Room 610 Journalism

Section 2—2-3:10 p. m., Tuesday; 1:30-3 p. m., Wednesday and Friday. Room 409 Avery

Section 3—3-4:25 p. m., Monday, Wednesday, and Thursday. Room 307 Hamilton

Section 4—3-4:25 p. m., Tuesday, Wednesday and Friday. Room 309 Hamilton

Section 5—4:30-5:55 p. m., Monday, Wednesday and Thursday. Room 303 Hamilton

Section 6—4:30-5:55 p. m., Tuesday, Wednesday and Friday. Room 307 Hamilton

Section 7—7-8:15 p. m., Monday; 7-8:45 p. m., Wednesday; and 7-8:15 p. m., Thursday. Room 303 Hamilton

Section 8—8:30-9:55 p. m., Tuesday, Wednesday and Friday. Room 307 Hamilton

*College sections 9 and 10 limited to men matriculated in Columbia College.*

Section 9—11-11:50 a. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 611 Journalism. Dr. J. L. PERRIER

Section 10—1:10-2 p. m., Monday, Wednesday and Friday. Room 408 Hamilton; 2:10-3 p. m., Tuesday and Thursday. Room 408 Hamilton. Mr. R. VAILANT

This course is intended for students who have no previous knowledge of French.

The instruction is planned so as to enable students to read at sight ordinary French prose. Reading and oral drill will constitute a large part of the work of the course. In connection with the reading, a careful study of the essentials of grammar and syntax will be taken up, together with simple composition. Attention will be paid to correct pronunciation, and as far as possible to the understanding of simple spoken French.

**French eA3-A4—Elementary course.** Credit I, IV. 2 points each Session. Dr. H. J. SWANN

9-10:40 a. m., Saturday. Room 603 Journalism. Fee \$16 each Session

Courses eA3-A4 are together equivalent to French eA1.

For description of course, see French eA1-A2, page 110.

**French eA5-A6—Elementary course.** Credit I, IV. 2 points each Session. Dr. H. J. SWANN

11 a. m.-12:40 p. m., Saturday. Room 610 Journalism. Fee \$16 each Session

Courses eA5-A6 are supplementary to French eA3-A4, and are together equivalent to French eA2.

Prerequisite: Half year of college French or equivalent.

**French eA8—Elementary course.** Credit I, IV. 4 points Spring Session. Hours to be arranged. See Announcement of Spring Session. Fee \$32

Equivalent to French eA1 given in the Spring Session for students who enter at that time.

**French eA9—Elementary course.** Credit I, IV. 4 points Winter Session. Fee \$32. Messrs. J. H. ENGLISH, P. DE LA ROCHELLE and A. P. SPRINGER

Section 1—3-4:25 p. m., Monday, Wednesday and Thursday. Room 406 Hamilton

Section 2—4:30-5:55 p. m., Tuesday, Wednesday and Friday. Room 309 Hamilton

Section 3—4:30-5:55 p. m., Monday, Wednesday and Thursday. Room 609 Hamilton

Section 4—7-8:15 p. m., Tuesday; 7-8:45 p. m., Wednesday and 7-8:15 p. m., Friday. Room 309 Hamilton

Equivalent to French eA2. Planned also for students who began the study of French in the Summer Session.

Prerequisite: Half year of college French or equivalent.

**French eB1-B2—Intermediate course—grammar, reading, and composition.** Credit I, IV. 4 points each Session. Fee \$32 each Session. Dr. T. CLARK, Messrs. L. FERARU, A. GEORGE, J. E. HARRIS and C. S. PARKER

Section 1—3-4:25 p. m., Monday, Wednesday and Thursday. Room 408 Hamilton

Section 2—3-4:25 p. m., Tuesday, Wednesday and Friday. Room 609 Hamilton

Section 3—4:30-5:55 p. m., Monday, Wednesday and Thursday. Room 701 Hamilton

*Section 4 limited to men intending to continue French in Columbia College.*

Section 4—4:30-5:55 p. m., Tuesday, Wednesday and Friday. Room 716 Hamilton

Section 5—7-8:15 p. m., Monday; 7-8:45 p. m., Wednesday; and 7-8:15 p. m., Thursday. Room 609 Hamilton

The work will include a review of the essentials of grammar, exercises in composition, and much oral practice in reading and conversation. The reading will consist of narrative and historical texts and several plays.

Prerequisite: One year of college French or equivalent.

**French eB3-B4—Intermediate course—grammar, reading, and composition.** Credit I, IV. 2 points each Session. Mr. L. FERARU

9-10:40 a. m., Saturday. Room 507 Journalism. Fee \$16 each Session

Courses eB3-B4 are together equivalent to French eB1.

Prerequisite: One year of college French or equivalent.

**French eB5-B6—Intermediate course—grammar, reading, and composition.** Credit I, IV. 2 points each Session. Mr. L. FERARU

11 a. m.—12:40 p. m., Saturday. Room 511 Journalism. Fee \$16 each Session

Courses eB5-B6 are supplementary to French eB3-B4, and are together equivalent to French eB2.

Prerequisite: One year of college French and French eB3-B4 or equivalent.

**French eB8—Intermediate course—grammar, reading, and composition.** Credit I, IV. 4 points Spring Session. Professor H. F. MULLER and Miss HÉLÈNE BIÉLER

Hours to be arranged. See Announcement of Spring Session. Fee \$32

Equivalent to French eB1, given in the Spring Session.

**French eB9—Intermediate course—grammar, reading and composition.** Credit I, IV. 4 points Winter Session. Fee \$32. Professor H. F. MULLER and Miss HÉLÈNE BIÉLER

Section 1—4:30-5:55 p. m., Monday, Wednesday and Thursday. Room 301 Mines

Section 2—4:30-5:55 p. m., Tuesday, Wednesday and Friday. Room 607 Hamilton

Section 3—7-8:15 p. m., Monday; 7-8:45 p. m., Wednesday; and 7-8:15 p. m., Thursday. Room 517 Hamilton

Equivalent to French eB2, given in the Winter Session. For description, see French eB1-B2 above.

Prerequisite: French eB1 or equivalent.



**French eJ1-J2—Intermediate course.** Reading of French newspapers, grammar and composition. Credit I, IV. 4 points each Session. Mr. A. D. MENUT

7-8:15 p. m., Tuesday; 7-8:45 p. m., Wednesday; 7-8:15 p. m., Friday. Room 501 Hamilton. Fee \$32 each Session

The work will include primarily intensive reading of journalistic French, a review of the essentials of grammar, and exercises in composition. Specially devised for students looking forward to journalism.

Prerequisite: One year of college French or equivalent.

**French e3-4—Practical course and introduction to French literature: composition, reading and conversation.** Credit I, IV. 3 points each Session. Mr. L. FERARU

3:10-4:25 p. m., Monday and Thursday. Room 309 Hamilton. Fee \$24 each Session

The work consists of advanced composition, conversation, and dictation on the history of French literature supplemented by the reading of selected works by representative authors. Students will be expected to write themes and reports in French.

Equivalent to French 3-4 in Columbia College and Barnard College.

Prerequisite: French eB1-B2 or equivalent.

**French e3a-4a—Practical course and introduction to French literature: composition, reading, and conversation.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Dr. ALMA DE L. LE DUC and Mr. P. DE LA ROCHELLE

Section 1—3:10-4:25 p. m., Tuesday and Friday. Room 307 Hamilton

Section 2—8:20-9:35 p. m., Tuesday and Friday. Room 303 Hamilton

Intended for students completing French eB9. French e4a equals French e3, and is given in the Spring Session; French e3a equals French e4, and is given in the Winter Session. For description see French e3-4 above.

**French e9-10—Advanced composition and practice in speaking French.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Professor H. C. OLINGER

Section 1—3:10-4:25 p. m., Monday and Thursday. Room 607 Hamilton

Section 2—4:30-5:45 p. m., Tuesday and Friday. Room 502 Hamilton

The objects of this course are to give students a thorough appreciation and a certain facility in the use of the French language as an instrument of expression. The exercises will consist of composition and conversation, based upon topics of practical everyday French.

Prerequisite: French eB1-B2 or equivalent.

**French e9a-10a—Advanced composition and practice in speaking French.** Credit I, IV. 3 points each Session. Mr. P. DE LA ROCHELLE

3:10-4:25 p. m., Monday and Thursday. Room 402 Hamilton. Fee \$24 each Session

French e9a equals French e9, and is given in the Spring Session; French e9a equals French e10, and is given in the Winter Session. For description see French e9-10 above.

**Business e93-94—Commercial French: intensive training course in spoken French.** Credit IX. 2 points each Session. Professor P. DE BACOURT  
4:30-6:10 p. m., Tuesday. Room 707 Journalism. Fee \$16 each Session



To supplement Commercial French b93-94 of the School of Business. Intended to develop facility of speech for commercial purposes.

Prerequisite: French b94 or French 4, or a command of spoken French sufficient to satisfy the instructor.

**French e115-116—Contemporary French writers, 1885-1920.** Credit II. 3 points each Session. Professor A. G. H. SPIERS

4:30-6:10 p. m., Monday. Room 309 Hamilton. Fee \$24 each Session

Rapid reading and discussion of significant poetry, novels, and drama of the present day, accompanied by talks on the general tendencies of French thought before and during the war. Conducted in French.

Those wishing to take this course are requested to communicate with Professor Spiers as early as possible so that books may be ordered from abroad.

Prerequisite: French e3-4 or equivalent.

**French e119-120—French literature in the nineteenth century.** Credit II. 3 points each Session. Professor E. B. BABCOCK

4:30-5:45 p. m., Tuesday and Friday. Room 302 Philosophy. Fee \$24 each Session

This course deals with trends of thought in the nineteenth century as exemplified by representative works of the chief novelists, dramatists, and poets. After a survey of the Romantic movement special attention will be given to contemporary writers, the contributions of modern France to history and philosophy receiving consideration as well as the tendencies and development of present-day literature. Lectures and assigned readings, class discussions, and reports on special topics will form the basis of the work. Some attention will be given to the literature produced in France as a result of the war. The course will be conducted in French.

Prerequisite: French e3-4 or equivalent.

Equivalent to French 119-120 in the Faculty of Philosophy.

#### ITALIAN

**Italian eA1-A2—Elementary course.** Credit I, IV. 3 points each Session. Mr. G. BIGONGIARI

4:30-5:45 p. m., Tuesday and Friday. Room 517 Hamilton. Fee \$24 each Session

The aim of this course is to impart an accurate reading knowledge of modern Italian, together with a correct pronunciation. The work will consist of a careful study of the elements of grammar and syntax, and in Italian e2 special attention will be paid to reading and composition.

Equivalent to Italian A1-A2 as given in Columbia College and Italian 1-2 in Barnard College.

**Italian e3-4—Advanced course.** Credit I, IV. 3 points each Session. Mr. G. BIGONGIARI

7-8:15 p. m., Tuesday and Friday. Room 518 Hamilton. Fee \$24 each Session

This course will consist of advanced reading, composition, and conversation. The two courses together may be considered a preparation for the graduate courses of the Faculty of Philosophy.

#### RUMANIAN

**Rumanian e115-116—A Survey of Rumanian literature.** Credit II. 3 points each Session. Mr. L. FERARU

4:30-5:45 p. m., Monday and Thursday. Room 403 Avery. Fee \$24 each Session

Lectures in English on the history of Rumanian literature, with special reference to the French influence. The study of Rumania's social, political and cultural movements, as well as her folklore and art, will form the background of this course.

A knowledge of the Rumanian language, though not required, is recommended for this course.

## SPANISH

*Departmental Representative:* Mr. F. CALLCOTT. Office hour 3-3:30 p. m., Tuesday and Friday. Room 301 University Hall

**Spanish eA1-A2—Elementary course.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Dr. J. A. VAETH, Miss C. EVANGELINE FARNHAM, Messrs. F. CALLCOTT, E. AGRAMONTE, G. EVERETT, P. M. RICCIO, L. A. WILKINS and R. H. WILLIAMS

Section 1—1:45-3 p. m., Monday and Thursday. Room 409 Avery

Section 2—1:45-3 p. m., Wednesday and Friday. Room 403 Avery

Section 3—3:10-4:25 p. m., Monday and Thursday. Room 502 Hamilton

Section 4—3:10-4:25 p. m., Tuesday and Friday. Room 406 Hamilton

Section 5—4:30-5:45 p. m., Monday and Thursday. Room 307 Hamilton

Section 6—4:30-5:45 p. m., Tuesday and Friday. Room 303 Hamilton

Section 7—6:10-7:25 p. m., Monday and Thursday. Room 307 Hamilton

Section 8—7-8:15 p. m., Tuesday and Friday. Room 307 Hamilton

Section 9—7:30-8:45 p. m., Monday and Thursday. Room 307 Hamilton

The aim of this course is to impart an accurate reading knowledge of modern Spanish together with a correct pronunciation. The work will consist of a careful study of the elements of grammar and syntax; and in Spanish eA2 special attention will be paid to composition.

**Spanish eA8—Elementary course.** Credit I, IV. 3 points Spring Session. Miss LEILA E. AIKEN, Messrs. N. B. ADAMS, E. AGRAMONTE and R. H. WILLIAMS  
Hours to be arranged. See Announcement of Spring Session. Fee \$24.

Equivalent to Spanish eA1, given in the Spring Session for students who enter at that time.

**Spanish eA9—Elementary course.** Credit I, IV. 3 points Winter Session  
Fee \$24. Messrs. F. CALLCOTT, N. B. ADAMS and P. M. RICCIO

Section 1—4:30-5:45 p. m., Tuesday and Friday. Room 609 Hamilton

Section 2—6:10-7:25 p. m., Monday and Thursday. Room 309 Hamilton

Section 3—8:20-9:35 p. m., Tuesday and Friday. Room 309 Hamilton

Equivalent to Spanish eA2. Planned also for students who begin the study of Spanish in the Summer Session.

**Spanish eA18—Elementary course.** First half. Credit I, IV. 2 points  
Spring Session. Mr. F. CALLCOTT  
3:10-4:50 p. m., Saturday. Fee \$16

This course equals eA21 and is given in the Spring Session. It is intended for students who have no knowledge of the language. Correct pronunciation and the elements of grammar are emphasized.

**Spanish eA19—Elementary course.** Second half. Credit I, IV. 2 points  
Winter Session. Mr. F. CALLCOTT  
3:10-4:50 p. m., Saturday. Room 407 Avery. Fee \$16

This course is conducted in the same manner as eA2. Special attention is given to composition. It is intended for students who have had eA18 or sA1 in the Summer Session or equivalent.

**Spanish eA21-A22—Elementary course.** Credit I, IV. 2 points each Session. Mr. F. CALLCOTT

1:30-3:10 p. m., Saturday. Room 407 Avery. Fee \$16 each Session

This course is equivalent to four points of eA1-A2 and is conducted in the same manner. It is intended for students who have no knowledge of the language. For further description see Spanish eA1-A2.

**Spanish eB23-B24—Intermediate course.** Credit I, IV. 2 points each Session. Mr. L. A. WILKINS

3:10-4:50 p. m., Saturday. Room 408 Avery. Fee \$16 each Session

This course is a continuation of Spanish eA21-A22 and consists of composition, the reading of modern prose and a review of the essentials of Spanish grammar. It is especially adapted to students who have had Spanish eA21-A22 or sA2 in the Summer Session.

Prerequisite: Spanish eA21-A22 or equivalent.

**Spanish eB1-B2—Intermediate course—grammar, reading and composition.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Professor J. L. GERIG, Miss C. EVANGELINE FARNHAM, Messrs. R. ARRATIA and L. A. WILKINS

Section 1—1:45-3 p. m., Monday and Thursday. Room 302 Engineering

Section 2—4:30-5:45 p. m., Tuesday and Friday. Room 306 Engineering

Section 3—7-8:15 p. m., Tuesday and Friday. Room 408 Hamilton

Section 4—8:45-10 p. m., Monday and Thursday. Room 303 Hamilton

A continuation of Spanish eA1-A2, in which emphasis will be placed on rapid reading of modern prose, on composition and conversation.

Equivalent to Spanish B1-B2 as given in Columbia College and Spanish 3-4 in Barnard College.

**Spanish eB8—Intermediate course—grammar, reading and composition.** Credit I, IV. 3 points Spring Session. Messrs. F. CALLCOTT, N. B. ADAMS and L. A. WILKINS

Hours to be arranged. See Announcement of Spring Session. Fee \$24

Equivalent to Spanish eB1, given in the Spring Session.

**Spanish eB9—Intermediate course—grammar, reading and composition.** Credit I, IV. 3 points Winter Session. Fee \$24. Messrs. F. CALLCOTT, N. B. ADAMS and R. ARRATIA

Section 1—1:45-3 p. m., Monday and Thursday. Room 307 Havemeyer

Section 2—4:30-5:45 p. m., Tuesday and Friday. Room 516 Hamilton

Section 3—6:10-7:25 p. m., Tuesday and Friday. Room 402 Hamilton

Equivalent to Spanish eB2, given in the Winter Session. For description, see Spanish eB1-B2 above.

Prerequisite: Spanish eB1 or equivalent.

**Spanish eB11-B12—Intermediate composition, conversational practice and commercial correspondence.** Credit I, IV. 3 points each Session. Fee \$24 each Session. Mr. E. AGRAMONTE



Section 1—3:30-6 p. m., Saturday. Room 403 Avery

Section 2—4:30-5:45 p. m., Monday and Thursday. Room 306 Engineering

Section 3—4:30-5:45 p. m., Tuesday and Friday. Room 302 Engineering

Section 4—7-8:15 p. m., Monday and Thursday. Room 408 Hamilton

Section 5—8:20-9:35 p. m., Monday and Thursday. Room 408 Hamilton

The object of this course is to give the student practice in spoken and written Spanish with special reference to commercial practice, including composition, reading, dictation, and letter writing. Attention will be paid to legal, commercial and technical terms in most common use.

Prerequisite: Spanish eA1-A2 or equivalent.

**Business e95-96—Commercial Spanish. An intensive advanced course.**

Credit IX. 3 points each Session. Mr. E. AGRAMONTE

3:10-4:10 p. m., Wednesday; 9:30-11 a. m., Saturday. Room 605 Journalism.

Fee \$24 each Session

To supplement Commercial Spanish b95-96 of the School of Business. The course is conducted in Spanish as much as possible.

Prerequisite: Spanish b95-96 or Spanish eB11-B12, or a command of spoken Spanish sufficient to satisfy the instructor.

**Spanish eJ1-J2—Intermediate course. Reading of modern Spanish prose.**

Credit I, IV. 3 points each Session. Mr. R. H. WILLIAMS

7-8:15 p. m., Tuesday and Friday. Room 406 Hamilton. Fee \$24 each Session

This course is intended especially for students who wish to acquire the ability to read modern Spanish with ease, but who do not care to emphasize further the study of the grammar and composition of the language. Students will be required to read standard novels by modern Spanish writers of note. Magazine articles and newspapers will be studied occasionally. The use of spoken Spanish in the class will increase as rapidly as consistent with the students' progress. This course can not be counted as a prerequisite to more advanced courses.

Prerequisite: Spanish eA1-A2 or equivalent.

**Spanish e3-4—Practical course and introduction to Spanish literature.**

Credit I, IV. 3 points each Session. Fee \$24 each Session. Professor L. IMBERT and Mr. F. CALLCOTT

Section 1—4:30-5:45 p. m., Tuesday and Friday. Room 701 Hamilton

Section 2—7-8:15 p. m., Tuesday and Friday. Room 503 Hamilton

The work consists of advanced composition, conversation, and dictation on the history of Spanish literature supplemented by the reading of selected works by representative authors. Students will be expected to write themes and reports in Spanish.

Prerequisite: Spanish eB1-B2 or equivalent.

Equivalent to Spanish 3-4 as given in Columbia College and Spanish 5-6 in Barnard College

**Spanish e3a-4a—Practical course and introduction to Spanish literature. Credit I, IV. 3 points each session. Mr. F. CALLCOTT**

1:45-3 p. m., Wednesday and Friday. Room 407 Avery. Fee \$24 each Session

Intended for students completing eB9. Spanish e4a equals Spanish e3, and is given in the Spring Session. Spanish e3a equals Spanish e4 and is given in the Winter Session. Students who have had e3, e4a, or e3 should register for e3a in the Winter Session.

For description see Spanish e3-4 above.

**Spanish e101-102—Masterpieces of Spanish literature. Credit II. 3 points each Session. Mr. JUAN CUETO**

4:30-5:45 p. m., Monday and Thursday. Room 302 Philosophy. Fee \$24 each Session



This course is a general survey of Spanish literature and deals principally with the fundamental characteristics of the various epochs and a direct study is made of the great writers and their representative works. The class work will consist of lectures, "explicación de textos" and outside reading. The following are some of the works that will be studied in detail: "Poema de mio Cid," "El Abencerraje," "Lazarillo de Tormes," "Peribañez" by Lope de Vega, "El Alcalde de Zalamea" by Calderón, "Don Juan Tenorio" by Zorrilla, "Trafalgar" by Galdós, "Los intereses creados" by Benavente, etc.

The course is conducted in Spanish.

It is recommended that students elect this as their first graduate course.

Prerequisite: Spanish e3-4 or equivalent.

### **Spanish e103-104—Advanced study in Spanish composition and style.**

Credit II. 3 points each Session. Mr. JUAN CUETO

4:30-5:45 p. m., Tuesday. Room 308 Philosophy. Fee \$24 each Session

This is intended for students and teachers pursuing graduate courses. Its purpose is to aid the student in creating and developing correctness of expression and style.

The discussions will be conducted in Spanish.

Prerequisite: Spanish e3-4 or equivalent.

**Spanish e105—Life and customs of Spain.** Credit II. 3 points Winter Session. Mr. JUAN CUETO

1:30-3:10 p. m., Saturday. Room 408 Avery. Fee \$24

Reading of selections from Spanish authors in which are depicted the genius, political life, diversions, salient historical facts, and customs of Spain. Conducted in Spanish.

**Spanish e106—Life and customs of Spanish America.** Credit II. 3 points Spring Session. Mr. L. A. WILKINS

1:30-3:10 p. m., Saturday. Fee \$24

Material selected from Spanish-American authors on topics similar to those mentioned in the outline for Spanish e105 (above). Composition in Spanish on assigned topics. Conducted in Spanish.

**Spanish e107-108—Don Quixote de la Mancha.** Credit II. 3 points each Session. Mr. JUAN CUETO

8:20-9:35 p. m., Monday. Room 407 Avery. Fee \$24 each Session

Reading of El Quijote, together with comments and lectures designed to explain the literal meaning, the literary value and the historical value of the work of Cervantes.

A complete reading knowledge of Spanish is required.

Conducted in Spanish.

**Spanish e113-114—Benito Pérez Galdós.** Credit II. 3 points each Session. Professor F. DE ONÍS

8:20-9:35 p. m., Tuesday. Room 308 Philosophy. Fee \$24 each Session

Estudio de la obra de Galdós en su doble significación de obra artística y expresión de la vida española en el siglo XIX.

A complete reading knowledge of Spanish as well as the ability to understand the spoken language is required.

**Rumanian (see p. 114)**

## **SECRETARIAL CORRESPONDENCE**

**Secretarial correspondence e1-2—Letter writing.** 3 points each Session  
Fee \$24 each Session. Miss STELLA S. CENTER

Section 1—4:30-5:45 p. m., Tuesday and Friday. Room 507 Journalism

Section 2—7-8:15 p. m., Monday and Thursday. Room 707 Journalism

This course is planned to give the student the technical equipment he needs as a secretary: that is, it includes a study of different types of social and business letters and practice in writing them; the gathering of material for reports and putting it into compact, usable form; the preparation of manuscript for the printer; the rules governing good usage in letter-writing with respect to stationery, form, arrangement, and style. The course offers in the second place suggestions for extensive reading in those fields of business and professional life where the secretary's work is likely to be. Lastly, it offers a detailed study of the biographies of great letter writers and a critical appreciation of their letters.

English eA1-A2 or its equivalent in collegiate composition training is prerequisite.

## SECRETARIAL STUDIES

The University offers through its School of Business and the Department of University Extension, classes in secretarial studies. In University Extension these courses normally require two years.

A special circular will be sent on application to the Secretary of Columbia University.

**Serb (see Serbo-Croatian, p. 122)**

## SLAVONIC

Attention is also called to the courses in Spoken Language (see special circular) and to the classes in Chinese, p. 57; also to Linguistics, p. 96.

## HISTORY

**History e125—History of Russia.** Lecture-study course. Credit II. 3 points Winter Session. Professor J. D. PRINCE

4-5:40 p. m., Wednesday. Room 302 Mines. Fee \$24

The work will cover a careful treatment of Russian history from the earliest times to the modern period, with a discussion of the attitude of Russia during the world war and the Revolution, and a brief survey of its political development. Special native lecturers will address the class on modern Russian political thought. In connection with this work should be noted the following course which stands in close relation to the history of Russia and which is a desirable supplement in order to understand Russian development.

**History e126—History of Poland, Czecho-Slovakia (Bohemia), Serbia and Bulgaria.** Credit II. 3 points Spring Session. Professor J. D. PRINCE

4-5:40 p. m., Wednesday. Fee \$24

The work will be supplemented by special lectures given by native experts on the present situation in the new Slavonic states of Poland, Czecho-Slovakia and the Kingdom of the Serbs and Croats.

**History e103-104—The history of the Eastern question.** Lectures and conferences. Credit II. 3 points each Session. Fee \$24 each Session. Mr. V. H. KALENDERIAN

Section 1—4:30-6 p. m., Tuesday. Room 301 Mines

Section 2—7:30-9:10 p. m., Tuesday. Room 301 Mines

This course deals with the origin and development of the Ottoman Empire and its relations with the nations of Europe. It includes: a brief survey of the Byzantine and Latin empires; the Turkish Conquest and its influence on successive phases of European diplomacy up to the

close of the eighteenth century; Napoleon's Oriental project; the partition of the Ottoman Empire during the nineteenth and early twentieth centuries and the bearing of this process upon European international politics. Stress is laid also upon racial characteristics and upon religious, social and economic conditions. The year 1856 will be the dividing point between the Winter and Spring Session.

#### SLAVONIC

### **Slavonic e111—Folk life and customs of the Near Eastern peoples.**

Credit II. 3 points Winter Session. Mr. V. H. KALENDERIAN

7-8:40 p. m., Thursday. Room 706 Philosophy. Fee \$24

This course deals with the general mode of life, the habits and customs, chiefly of the Arabs, Armenians, Georgians, Gypsies, Persians, Syrians, Kurds, Turks, the Slavonic nationalities, and the Rumanians. There will be a general historical introduction, after which each nation's art, folklore, folk music, and folk dances, birth, marriage and death ceremonies, religion and superstitions, domestic customs, social and moral codes will be treated in detail.

The Slavonic nationalities will be presented in a lecture by Professor John D. Prince, Head of the Department, and Rumanian folklore and music will be treated by Mr. F. Vexler.

#### RUSSIAN

### **Russian e107-108—Elementary course. Russian grammar with instruction in reading, writing and speaking.** Credit II. 3 points each Session.

Fee \$24 each Session. Mr. I. S. ANDREEVSKI

Section 1—2:45-4:25 p. m., Friday. Room 404 Philosophy.

Section 2—6:10-7 p. m., Tuesday and Friday. Room 409 Avery

This course is intended for beginners and aims primarily to familiarize the student with the common vocabulary and the fundamental grammatical facts of the language, so as to enable him to read ordinary Russian at sight.

### **Russian e109-110—Advanced course. Reading and composition.** Credit II. 3 points each Session. Fee \$24 each Session. Mr. I. S. ANDREEVSKI

Section 1—4:30-6:10 p. m., Monday. Room 409 Avery

Section 2—6:10-7:50 p. m., Monday. Room 409 Avery

The chief work will consist of exercises in composition, both oral and written, based on the reading of selected works from modern prose writers and on topics of everyday life.

Intended for students who have had Russian e107-108, or an equivalent knowledge.

### **Russian e111-112—Practical course and introduction to Russian literature in the original. Advanced composition, reading and conversation.**

Credit II. 3 points each Session. Mr. I. S. ANDREEVSKI

4:10-5 p. m., Wednesday and Thursday and an additional conference hour to be arranged to suit the convenience of the student. Room 409 Avery. Fee \$24 each Session

The work will consist of lectures and conversations on the history of Russian literature, supplemented by the reading of selected works from representative authors in the original Russian.

Prerequisite: Russian e109-110 or an equivalent knowledge.

### **Russian e115-116—Main currents of social thought in Russian literature.** Credit II. 3 points each Session. Mr. I. S. ANDREEVSKI

4:30-6:10 p. m., Friday. Room 409 Avery. Fee \$24 each Session

It is the aim of this course to offer in a series of lectures in English, an historical outline of the development of Russian thought and ideals, recorded in the most prominent literary productions of the nation for the last hundred and fifty years.

Open to students who have no knowledge of Russian.



**Russian e117-118—Introduction to Russian literature.** Credit II. 3 points each Session. Dr. C. A. MANNING

4:30-6:10 p. m., Thursday. Room 406 Philosophy. Fee \$24 each Session

The lectures in this course will cover the history of Russian literature especially since the beginning of the nineteenth century. Special attention will be paid to the important writers, as Pushkin, Gogol, Turgeniev, Tolstoy, and Dostoyevsky as well as to the more modern developments.

Open to students who have no knowledge of Russian.

**Russian e121-122—Russian dramatists.** Credit II. 3 points each Session. Mr. I. S. ANDREEVSKI

4:30-6:10 p. m., Tuesday. Room 409 Avery. Fee \$24 each Session

This course aims to describe the development of the Russian drama and the works of the reading masters, especially Gogol, Ostrovsky, Tolstoy, Chekhov, Andreyev and Gorky.

Open to students who have no knowledge of Russian.

Each year courses will be offered covering different phases of Russian literature.

#### POLISH

**Polish e101-102—Elementary Polish.** Credit II. 3 points each Session. Dr. A. MORAWSKI-NAWENCH

7-8:40 p. m., Wednesday. Room 607 Hamilton. Fee \$24 each Session

Elementary course in the Polish language followed by easy readings with written and oral exercises.

Open to persons unfamiliar with Polish.

**Polish e105-106—Advanced Polish.** Credit II. 3 points each Session. Dr. A. MORAWSKI-NAWENCH

7-8:40 p. m., Tuesday. Room 607 Hamilton. Fee \$24 each Session

Advanced course in the Polish language. Readings, written and oral exercises.

Prerequisite: Polish e101-102 or equivalent knowledge.

**Polish e107-108—History of the political and cultural evolution of Poland.** Credit II. 3 points each Session. Dr. A. MORAWSKI-NAWENCH

4:30-6 p. m., Tuesday. Room 311 Havemeyer. Fee \$24 each Session

This course deals with the development of Polish democratic thought and ideals from the earliest times, together with the literary and artistic movements dependent upon them. The work during the Winter Session will cover the period up to the Peace of Tilsit in 1807. The work in the Spring Session will deal with the developments since that time, including the reconstruction of Poland.

Open to persons unfamiliar with Polish.

#### CZECHO-SLOVAK (BOHEMIAN)

**Czech e101-102—Elementary Czech with exercises in conversation, reading and composition.** Credit II. 3 points each Session. Mr. A. B. KOUKOL

5:10-6 p. m., Tuesday and Thursday. Room 610 Philosophy. Fee \$24 each Session

Open to persons unfamiliar with Czecho-Slovak.

**Czech e103-104—Lectures on the development of the Czecho-Slovak literature and the national life in modern times.** Credit II. 3 points each Session. Mr. A. B. KOUKOL

7-8:40 p. m., Wednesday. Room 508 Philosophy. Fee \$24 each Session



This course will cover especially the period beginning with the rebirth of the Czecho-Slovak people toward the end of the eighteenth century. Emphasis will be laid on the close connection between the present aspirations and accomplishments of this nation and their earlier literary and intellectual endeavors. As an introduction, a few lectures will be devoted to a brief survey of the development of the early Czecho-Slovak literature and of its subsequent decline after Bohemia's loss of political independence in 1620.

Open to persons unfamiliar with Czecho-Slovak.

**Czech e105-106—Advanced Czecho-Slovak.** Credit II. 3 points each Session. Mr. A. B. KOUKOL

7-8 p. m., Tuesday and Thursday. Room 510 Fayerweather. Fee \$24 each Session

Advanced course in the Czecho-Slovak language. Reading, written and oral exercises.

Prerequisite: Czech e101-102 or equivalent knowledge.

#### SERBO-CROATIAN

**Serb e101-102—Elementary Serbo-Croatian.** Credit II. 3 points each Session. Mr. M. S. STANOYEVICH

7-8 p. m., Monday and Wednesday. Room 601 Hamilton. Fee \$24 each Session

Study of grammar and syntax. Simple composition, reading and oral exercises.

Open to persons unfamiliar with Serbo-Croatian.

**Serb e103-104—Advanced Serbo-Croatian.** Credit II. 3 points each Session. Mr. M. S. STANOYEVICH

8-9 p. m., Monday and Wednesday. Room 601 Hamilton. Fee \$24 each Session

A survey of the development of the Serb language and literature. Translation from English and Serb. Study of Serb style. Interpretation of best modern authors of Serbia, Croatia, and Slovenia. It is intended for Serbo-Croatian students who wish to acquire a more thorough knowledge of their own language and for other students who desire a knowledge of Serb in preparation for work in Comparative Slavonic philology and literature.

Prerequisite: Serb e101-102 or equivalent knowledge.

**Serb e105-106—Modern Yugoslav culture.** Credit II. 3 points each Session. Mr. M. S. STANOYEVICH

7-8:40 p. m., Friday. Room 517 Hamilton. Fee \$24 each Session

The course consists of lectures, readings and discussions covering the geographical and ethnographical features of Yugoslavia, its political and cultural institutions, its diplomatic, financial and foreign policies, its recent history including the formation of the Kingdom of the Serbs, Croats and Slovenes, and the present condition of the country.

Open to persons unfamiliar with Serbo-Croatian.

#### BULGARIAN

**Bulgarian e101-102—Elementary Bulgarian.** Credit II. 3 points each Session. Mr. M. S. STANOYEVICH

7-8:40 p. m., Thursday. Room 601 Hamilton. Fee \$24 each Session

Study of grammar and syntax. Simple composition, reading and oral exercises.

Open to persons unfamiliar with Bulgarian.

## ARMENIAN

**Armenian eA101-102—The elements of the Armenian language with instruction in reading, writing and speaking.** Credit II. 3 points each Session. Mr. V. H. KALENDERIAN

3:10-4 p. m., Tuesday and Thursday. Room 409 Avery. Fee \$24 each Session

This course is designed to give to students a working knowledge of the Armenian language.

**Armenian e112—History and culture of the Armenians.** Credit II. 3 points Spring Session. Mr. V. H. KALENDERIAN

7-8:30 p. m., Thursday. Fee \$24

The course will present a careful treatment of the history of Armenia from its earliest times to the present period, including her civilization and colonies in various parts of the world. It will cover a discussion of the Armenian question especially during the years 1829 to 1914, the recent massacres and deportations, the part played by the Armenians in the World War, and the problem of her political reconstruction.

**Slovak (see Czecho-Slovak, pp. 121, 122)**

## SOCIOLOGY

**All students in Sociology before registering must consult the University Extension Special Bulletin entitled "Applied Social Science."**

The development of plans to make an extensive offering of courses in Applied Social Science has justified the preparation of the special bulletin. In addition to the present offerings, courses are being arranged in Child welfare, Rural social problems, Social legislation, Race problems, and also in Comparative social theory, Psychic factors of social problems, and Methods of survey and research.

**Sociology e42—Public health and standard of living.** Credit IV. 2 points Spring Session. Professor R. E. CHADDOCK

4:10-6 p. m., Friday. Fee \$16

This course treats in lectures, reports and discussions, the various phases of human conservation, and their economic and social significance. New conditions emphasize as never before the importance of measures to promote infant and child welfare; to improve the health of school children; and to protect, at all stages of their industrial life, the workers of industry. The standards of physical fitness for army service have revealed the consequences of past neglect. Records of physical defects, illness, mortality, individual output in industry acquire a national importance. The administration of health promoting activities and the protection of the standard of living are becoming matters of national concern.

**Sociology e55—The form and practice of community organization: principles and methods.** Lectures, round table, supervised field training. Credit IV. 2 points Winter Session. Fee \$16. (Open only with the consent of the Departmental Representative)

Section 1—7:30-9:10 p. m. Tuesday. Room 610 Philosophy

Section 2—3:10-4 p. m., Tuesday and Thursday. Room 515 Kent

Section 1—Practical problems of organization; the survey, initiating organization, the first activities, the overhead, publicity, financing, establishing leadership. Organization of communities on a non-sectarian, non-political basis: steps in organization. Problem analysis by specialists.

Section 2—Study of present day problems of community organization in comparison with historical forms of local social organization, especially the New England town, Russian local organization; the mark, the Mediaeval town, etc.

**Sociology e56—Programs of community organization.** Lectures, round table, supervised field training. Credit IV. 2 points Spring Session. Fee \$16. (Open only with the consent of the Departmental Representative)

Section 1—7:30-9:10 p. m., Tuesday.

Section 2—3:10-4 p. m., Tuesday and Thursday.

Section 1—Programs of community development as adapted to differing local situations. Community recreation, health, civics, art. Methods, means and agencies to be dealt with. Presentation and criticism of programs of existing community organizations. Trips to local and nearby neighborhood associations, community centers and councils, improvement societies.

Section 2—Analysis and criticism of types of community organization in the United States; the neighborhood association, the community council, block organization, councils of social agencies, community service, the chest, boards of public welfare, etc.

**Sociology e57—Mental aspects of community work: elements of biological and psychological principles.** Lectures, round table, readings, field observation. Credit IV. 3 points Winter Session. (Open only with the consent of the Departmental Representative)

7:30-9:10 p. m., Thursday. Room 407 Schermerhorn. Fee \$24

The behavioristic attitude; biological factors in inheritance, relations of mind and body, psychology of the emotions, psychology of abnormal mental states, elementary social psychology, mental aspects of crime and delinquency. Special lecturers on various topics covered.

**Sociology e58—Mental aspects of community work: measures of social adjustment.** Lectures, round table, readings, field observation. Credit IV. 3 points Spring Session. (Open only with the consent of the Departmental Representative)

7:30-9:10 p. m., Thursday. Fee \$24

Adjustments in home, church, local group and civic life. Adjustment to school environment, obstacles to intellectual development, intellect and behavior in adolescence, the machinery for treatment and adjustment of the abnormal both official and non official, creation of public opinion, legal restrictions, functions of agencies.

Special lecturers on various topics.

**Sociology e141—Practical applications of sociology.** Lectures, readings, discussions and exercises. Credit II. 3 points Winter Session. Mr. H. N. SHENTON

7:40-9:30 p. m., Thursday. Room 614 Kent. Fee \$24

A study of social conditions and processes with a view to determining procedure and policies for readjustment and reconstruction. Population, growth, distribution, density and composition. Migration, international and intra-national. Studies of race mixture, social heterogeneity, standards of living, conflicts of interests, etc. Constructive means for regulation of popular movements and for assimilation or Americanization. An analytical community study is required of those desiring credit for the course.

**Sociology e142—Practical applications of sociology.** Lectures, readings, discussions and exercises. Credit II. 3 points Spring Session. Mr. H. N. SHENTON

7:40-9:30 p. m., Thursday. Fee \$24

The development of movements for human betterment, including eugenics, euthenics, social legislation, socialized philanthropy, and social education. Problems of normal and abnormal society. Constructive sociological criticisms of various methods of social reform.



**Sociology e143—Principles of sociology.** Lectures, readings and papers.

Credit II. 3 points Winter Session. Mr. H. N. SHENTON

7:40–9:30 p. m., Tuesday. Room 615 Kent. Fee \$24

The individual in society. What is socialization? Gangs and bunches. What is society? How does it behave? Is there a social mind? Social organization. What is democracy? Collective decision and procedure. Social self-control. Leadership. Social significance of economic changes. Is there a verifiable social progress? Statistical sociology. Sociological bases for determining values, educational programs and public policies.

Text book: *Descriptive and Historical Sociology*.—F. G. Giddings.**Sociology e144—Problems of democracy.** Lectures, readings, discussions.

Credit II. 3 points Spring Session. Mr. H. N. SHENTON

7:40–9:30 p. m., Tuesday. Fee \$24

A study of social institutions, an inquiry as to the kind of institutions essential to a democracy and an examination of the nature and tendencies of existing social institutions. The development of institutions from folkways, customs, and mores. Kinship, religious, educational, political, and industrial institutions as well as those relating to property, sex, publicity, health, and recreation will be studied.

**Sociology e145—Social aspects of the class struggle: backgrounds, conditions and forces.** Credit II. 3 points Winter Session. Mr. S. P. DAVIES

7:40–9:30 p. m., Friday. Room 615 Kent. Fee \$24

Origin and nature of social classes. Underlying social forces. Causes of conflict. Class differentiations in various stages of social forces. Relation of general social conditions to the intensity of class strife. Recent trend of the struggle. Recent evidences of conflict: labor unrest and popular uprisings. Class solidarity as an international phenomenon.

**Sociology e146—Social aspects of the class struggle: programs and policies.** Credit II. 3 points Spring Session. Mr. S. P. DAVIES

7:40–9:30 p. m., Friday. Fee \$24

Possibility of social control of conditions underlying class warfare. Class control vs. social control. Class interests and class legislation. Programs of social reconstruction, radical and conservative; their social utility and practicability. Inadequacy of *laissez-faire*. Results of state regulation. Democratization of social institutions in effecting class understanding. International social welfare programs and conferences.

**Sociology e147—Social statistics; principles and methods.** Lectures, readings and laboratory exercises. Credit II. 3 points Winter Session. Mr. F. A. Ross

7:15–10 p. m., Tuesday. Room 502 Kent. Fee \$24

Elementary principles of statistics and their application to numerical data. Study how to gather and interpret statistical data. The principles underlying the several forms of the average, and measures of dispersion. Index numbers and other statistical measures are explained and analyzed. The methods of computation are taught in laboratory periods.

**Sociology e148—Social statistics; principles and methods.** Lectures, readings and laboratory exercises. Credit II. 3 points Spring Session. Mr. F. A. Ross

7:15–10 p. m., Tuesday. Fee \$24

A continuation of Sociology e147. The more advanced subjects of correlation and probable error are dealt with, and also tabulation and graphic presentation. Laboratory work includes computation of coefficients and preparation of charts.

Prerequisite: Sociology e147 or equivalent.



**Sociology e149—Social statistics; principles and methods.** Lectures, readings and laboratory exercises. Credit II. 3 points Winter Session. Mr. F. A. Ross

7:40-9:30 p. m., Wednesday and laboratory hour to be arranged. Room 502 Kent. Fee \$24

Same as Sociology e148 given in Winter Session.

Prerequisite: Sociology e150 or equivalent.

**Sociology e150—Social statistics; principles and methods.** Lectures, readings and laboratory exercises. Credit II. 3 points Spring Session. Mr. F. A. Ross

7:40-9:30 p. m., Wednesday, and laboratory hour to be arranged. Room 502 Kent. Fee \$24

Sociology e147 given in Spring Session.

**Sociology e153—Statistical investigation; principles and methods.** Lectures, readings and laboratory exercises. Credit II. 3 points Winter Session. Mr. F. A. Ross

7:40-9:30 p. m., Monday, and laboratory hour to be arranged. Room 502 Kent. Fee \$24

Designed to train students in the prevailing methods of instituting and conducting surveys and secondary statistical investigations. Research in and criticism of published sources of data. Schedule making and editing. Tabulation and table drafting, graphic and tabular presentation. Report making and criticism of reports.

Open with the consent of the instructor.

**Sociology e154—Advanced statistics.** Lectures, readings and laboratory exercises. Credit II. 3 points Spring Session. Mr. F. A. Ross

7:40-9:30 p. m., Monday, and laboratory hour to be arranged. Fee \$24

The mathematical principles of statistics will be dealt with, including the mathematical derivations of the various measures used in analyzing frequency distributions and contingency tables.

Thorough training in elementary and intermediate statistics is prerequisite.

Open only with the consent of the instructor.

**Sociology e155—Social work: types and methods.** Lectures, readings and discussions. Credit II. 3 points Winter Session. Mr. F. THOMAS

7:40-9:30 p. m., Monday. Room 515 Kent. Fee \$24

Includes a study of the English Poor Law and its effect upon public relief in the United States. The industrial revolution; its effect upon the family and community; social problems growing out of it, including congestion, poverty, crime, sickness, and family instability.

**Sociology e156—Social work: types and methods.** Lectures, readings and discussions. Credit II. 3 points Spring Session. Mr. F. THOMAS

7:40-9:30 p. m., Monday. Fee \$24

Family social work. Methods for dealing with destitute and neglected children; standards of placing-out; the function of the children's institution. Programs for handling juvenile and adult delinquency. Public health. Public charities. The care and prevention of insanity and feeble-mindedness. Housing reform.

**Sociology e159—Principles of community organization.** Lectures, readings and supervised field service. Credit II. 3 points Winter Session. (Open only with the consent of the Departmental Representative)

4:10-5 p. m., Tuesday and Thursday. Room 614 Kent. Fee \$24

Community organization principles. Origin of group sentiments and ideals. Forms of community action. Implications of trial and error process. Neighborhood tradition. Utilization of community forces. The development of administrative organization. Adaptability and fluidity of organization. Types of organization.

**Sociology e160—Principles of neighborhood leadership.** Lectures, readings and supervised field service. Credit II. 3 points Spring Session. (Open only with the consent of the Departmental Representative)

4:10-5 p. m., Tuesday and Thursday. Fee \$24

Personal aspects in community activities. Motives and methods of leaders. Control of the led. Sympathy of leader and led. Group control of the leader. Potential leadership. Development of the place of the leader. Mobilization of forces. Development of group abilities and attitudes. Steps in the establishment of leadership.

**Sociology e315-316—Seminar.** Discussions, research and thesis preparation. Credit II. 3 points each Session. Mr. H. N. SHENTON

7:40-9:30 p. m., alternate Mondays, beginning October 3. Room 503 Kent. Fee \$24 each Session

Methods of sociological study and research. Sociological sources. Work supplementing the University Extension courses in sociology, covering especially social assimilation, social institutions, collective decisions and social organization. Attention will be given to the preparation of the theses required of all candidates for the degree of A.M. in sociology.

Open only to students approved by the instructor.

## STENOGRAPHY AND TYPEWRITING

### *Isaac Pitman System*

The courses described below are planned for high school and college graduates who wish to prepare themselves for stenographic or secretarial duties and for students who desire to become teachers of shorthand and typewriting. Classes for beginners are started at the opening of each Winter, Spring, and Summer Session.

In addition to a careful presentation of the principles of stenography and typewriting, instruction is given in the following subjects: Secretarial and stenographic duties; editing; meeting office callers; telephoning; taking dictation; effective arrangement and display of typewriting; various forms and different parts of a letter; preparation of outgoing and incoming mail; commercial abbreviations; office reference books; remittance forms and other commercial papers; shipping and the papers involved; telegrams and cablegrams; practical information for typists; different parts of the typewriter and its care and repair; stencil cutting; operation of the mimeograph. This classroom work is as nearly like that of a business office as it is possible to make it. The touch method of typewriting as practised by rapid operators is taught.

Before receiving credit for courses in stenography and typewriting, students must pass an examination in elementary English, including grammar, composition, spelling, and punctuation. The examination is held regularly on the second Saturday afternoon of the Winter Session and of the Spring Session. All students registered for the morning courses are required to take this examination; any student who fails to obtain a passing grade must take whatever work in English the adviser recommends.

Before receiving final credit for stenography and typewriting, students must complete a week of practice work in the office of the Director.

In Room 509 Journalism Building there is an extensive shorthand library to which students have access.

The courses in stenography and typewriting are under the general supervision of Mr. WILLIAM E. HARNED, Room 509 Journalism. Office hours, 3-4 p. m., Tuesdays and Thursdays.

### *Morning Courses*

The morning courses are completed in one college year of thirty weeks. Students completing the courses are able to write shorthand at the rate of one hundred and twenty-five words a minute and to transcribe their notes on the typewriter at the rate of thirty words a minute.

To obtain full credit, students registering for stenography are required to take the corresponding course in typewriting, as designated below.

**Stenography e1-2—Elementary and intermediate.** 6 points each Session. Fee \$48 each Session

Section 1—9-10 a. m., Monday, Tuesday, Wednesday, Thursday and Friday; 11 a. m.-12 m., Monday, Tuesday, Wednesday and Thursday. Room 612 Journalism; and 11 a. m.-12 m., Friday. Room 507 Journalism, Mr. J. J. WRIGHT

Section 2—10-11 a. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 507 Journalism; 1-2 p. m., Monday, Wednesday, Thursday and Friday. Room 507 Journalism. Miss ETHEL A. ROLLINSON

Section 3—10-11 a. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 605 Journalism; and 1-2 p. m., Monday, Wednesday, Thursday and Friday. Room 511 Journalism. Miss ZILLAH K. MACDONALD

Section 4—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 206 Journalism. Mr. W. E. HARNED

This course is planned for beginners and should be taken in conjunction with Typewriting e1-2. All secretarial students working for a certificate are required to complete this course and Typewriting e1-2.

**Typewriting e1-2—Elementary and intermediate.** 4 points each Session. Fee \$32 each Session

Section 1—10-11 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday Thursday and Friday. Room 601 Journalism. Mr. J. J. WRIGHT

Section 2—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 601 Journalism. Miss ETHEL A. ROLLINSON

Section 3—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 609 Journalism. Miss ZILLAH K. MACDONALD

Section 4—1-2 p. m., Monday, Wednesday, Thursday and Friday; and 3-4 p. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 602 Journalism. Mr. W. E. HARNED

This course is planned for beginners and should be taken in conjunction with the corresponding sections of Stenography e1-2.

**Stenography e4—Elementary.** 6 points Spring Session. Fee \$48

Section 1—9-10 a. m. and 11 a. m.-12 m., Monday, Tuesday, Wednesday, Thursday and Friday. Mr. N. K. BRYANT

Section 2—10-11 a. m., Monday, Tuesday, Wednesday, Thursday and Friday; and 1-2 p. m., Monday, Wednesday, Thursday and Friday. Mr. E. J. RYAN

This course is planned for beginners and should be taken in conjunction with Typewriting e4.

**Typewriting e4—Elementary.** 4 points Spring Session. Fee \$32

Section 1—10-11 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday and Friday. Mr. N. K. BRYANT

Section 2—11 a. m.-12 m. and 2-3 p. m., Monday, Tuesday, Wednesday, Thursday and Friday. Mr. E. J. RYAN

This course is planned for beginners and should be taken in conjunction with Stenography e4.

**Stenography e5—Intermediate.** 6 points Winter Session. Mr. N. K. BRYANT



**9-10 a. m. and 11 a. m.-12 m., Monday, Tuesday, Wednesday, Thursday and Friday.** Room 603 Journalism. Fee \$48

This course is planned for students who have completed Stenography e4 or e1, or the equivalent, and should be taken in conjunction with Typewriting e5. All secretarial students working for a certificate are required to complete this course or Stenography e2 and Typewriting e5.

**Typewriting e5—Intermediate.** (Speed practice and transcription.) 4 points Winter Session. Mr. N. K. BRYANT

10-11 a. m. and 12 m.-1 p. m., Monday, Tuesday, Wednesday, Thursday and Friday. Room 609 Journalism. Fee \$32

This course is planned for students who have completed Typewriting e4 or e1, or the equivalent, and should be taken in conjunction with Stenography e5.

**Stenography e6—Advanced.** 2 points Spring Session. Mr. E. J. RYAN  
3:10-4 p. m., Monday, Wednesday, and Thursday. Fee \$16

**Stenography e9-10—Advanced.** 2 points each Session. Fee \$16 each Session

Section 1—3:10-4 p. m., Tuesday, Wednesday and Friday. Room 601 Journalism. Miss ETHEL A. ROLLINSON

Section 2—3:10-4 p. m., Monday, Wednesday, and Thursday. Room 609 Journalism. Mr. J. J. WRIGHT

All second year secretarial students who have completed the morning shorthand and typewriting courses, or who have obtained stenographic instruction in other schools, are required to attend one of these courses three days of each week for the whole of the second year. General, business, and legal dictation will be given at a rate varying from one hundred to one hundred and fifty words a minute.

**Typewriting e7—Elementary.** 2 points Winter Session. Miss ZILLAH K. MACDONALD

9-10 a. m., Monday, Tuesday, Thursday, and Friday. Room 609 Journalism. Fee \$16

This is a course for beginners and is designed especially for students who are required to hand in typewritten manuscripts for courses in English, story writing, photoplay, composition, and journalism.

### *Afternoon and Evening Courses*

The courses offered in the afternoon and evening are planned for students who can give only a portion of their time to the study of shorthand and typewriting. Both elementary and continuation classes are started in September and in February. Students registering for stenography are urged to take the corresponding course in typewriting as designated below. After a study of both shorthand and typewriting for forty-five or sixty weeks, students are able to write shorthand at the rate of one hundred words a minute, to transcribe their shorthand notes on the typewriter at the rate of twenty-five words a minute, and to perform the usual stenographic duties in a business office.

**Stenography e11-12—Elementary.** 3 points each Session. Mr. N. K. BRYANT

5:15-6:15 p. m., Monday, Wednesday, and Friday. Room 602 Journalism. Fee \$24 each Session

This course is planned for beginners and should be taken in conjunction with Typewriting e11-12.



**Typewriting e11-12—Elementary.** 2 points each Session. Mr. N. K. BRYANT

4:15-5:15 p. m., Monday, Wednesday, and Friday. Room 602 Journalism.  
Fee \$16 each Session

This course is planned for beginners.

**Stenography e14—Elementary.** 3 points Spring Session. Mr. T. E. CROAKE

4-5 p. m., Monday, Wednesday, and Friday. Fee \$24

This course is planned for beginners and should be taken in conjunction with Typewriting e14.

**Typewriting e14—Elementary.** 2 points Spring Session. Mr. T. E. CROAKE

5-6 p. m., Monday, Wednesday, and Friday. Fee \$16

This course is planned for beginners.

**Stenography e21-22—Elementary.** 3 points each Session. Mr. W. A. BRUCE

7:30-8:30 p. m., Monday, Wednesday, and Friday. Room 605 Journalism.  
Fee \$24 each Session

This course is planned for beginners and should be taken in conjunction with Typewriting e21-22.

**Typewriting e21-22—Elementary.** 2 points each Session. Mr. W. A. BRUCE  
8:30-9:30 p. m., Monday, Wednesday, and Friday. Room 601 Journalism.  
Fee \$16 each Session

This course is planned for beginners.

**Stenography e24—Elementary.** 3 points Spring Session. Mr. W. E. HARNED or assistant

8:30-9:30 p. m., Monday, Wednesday, and Friday. Fee \$24

This course is planned for beginners and should be taken in conjunction with Typewriting e24.

**Typewriting e24—Elementary.** 2 points Spring Session. Mr. W. E. HARNED or assistant

7:30-8:30 p. m., Monday, Wednesday, and Friday. Fee \$16

This course is planned for beginners.

**Stenography e27-28—Intermediate.** 4 points each Session. Mr. A. T. NEWTON

7:30-9:30 p. m., Monday, Wednesday, and Friday. Room 610 Journalism.  
Fee \$32 each Session.

This course is planned for students who have completed Stenography e21-22 or e24, or the equivalent. It includes dictation or speed practice, transcription of shorthand notes either on the typewriter or in handwriting, and accuracy and speed practice on the typewriter.

**Calculating machines e15—Calculating machine operation.** 3 points  
Winter Session. Mr. H. W. LEYENBERGER

6:30-7:30 p. m., Monday, Tuesday, Wednesday, and Thursday. Room 602  
**Journalism.** Fee \$24

This is a course for beginners and is designed especially for stenographers, typists, and those who desire to make use of the adding machine in bookkeeping, accounting, or statistical work. Machines will be furnished for this course. Four additional hours of practice work are required weekly.

## TEXTILES

**Textiles eX2—Woolens.** 2 points Spring Session. Mr. B. B. UNDERHILL  
7:30-9:20 p. m., Tuesday. Fee \$16

This course is intended to give a general working knowledge of woolens and worsteds. It teaches grading of wool, woolen and worsted spinning, weaving, dyeing, finishing, designing and fabric analysis.

**Textiles eY2—Silks.** 2 points Spring Session. Mr. J. CHITTICK  
7:30-9:30 p. m., Thursday. Fee \$16

This course covers the following subjects: Raw silks; spun silks or schappe; throwing; conditioning, etc.; skein and piece dyeing; preparatory processes, etc.; weaving; jacquards, etc.; printing; finishing; moiré and embossing; ribbon manufacturing; pile fabrics; standard market fabrics; fabric analysis and causes of imperfections; and cost calculating.

**Textiles eZ2—Cottons.** 2 points Spring Session. Mr. J. W. COX, JR.  
7:30-9:20 p. m., Friday. Fee \$16

This course will include the following subjects: A general survey of the cotton industry; a study of the fibre; cotton growing and marketing; preparatory machinery; carding and spinning; yarns, threads, etc.; warp preparation; weaving; cloth construction and analysis; cost calculations; bleaching; dyeing; printing; and merchandising. Some of the lectures will be illustrated by moving pictures.

## TYPOGRAPHY

**Typography e1—Preparation of material for publishing.** 2 points  
Winter Session. Mr. J. D. GABLER

9-10:40 a. m., Wednesday. Room 707 Journalism. Fee \$16

A brief outline of the history of typography and its allied subjects will be followed by a practical explanation of present-day printing methods and a description of the different systems of hand and machine type-setting employed in modern establishments. Detailed instruction will be given in the preparation of manuscript and other material for the printer, and in proof-reading. The work in proof-reading will include drill in the actual correction and revision of galley, page, and final proof, with special attention to spelling, correct division of words, and uniformity in punctuation, capitalization, abbreviations and minor matters of style. The work is planned to be of special value to authors, editors, secretarial students, students of advertising, printing, and all others who may come in contact with printing.

**Typography e2a—Preparation of material for publishing.** 2 points  
Spring Session. Mr. J. D. GABLER

7:40-9:20 p. m., Wednesday. Fee \$16

Typography e1 repeated in the Spring Session.

## VOCATIONAL GUIDANCE

**Vocational guidance e1—Vocational guidance of girls.** 2 points Winter Session. Dr. MABEL L. ROBINSON

7-8:40 p. m., Wednesday. Room 707 Journalism. Fee \$16

The aim of this course is to induce a more scientific attitude toward advisory work and to give a sound basis for counseling.

The course will include a survey of the field of labor for the place occupied by women: a study of the development and achievements of vocational guidance in the United States as a basis for discussion of methods; a study of the different educational levels from which girls enter vocations and the value at each level of educational guidance; an analysis of the various elements of vocational guidance; the relation of the school curriculum, psychological tests, self-analysis, etc., to the choice of a vocation; an analysis of vocational fields open to girls; a discussion of methods practical for advisers.

This course will count for credit with the Board of Education of New York toward promotion and toward a principal's or assistant principal's certificate.

## ZÖÖLOGY

See also Botany, p. 33

**Zöology e9-10—Elementary biology and zoölogy.** Lectures and laboratory. Credit I, IV. 2 points each Session. Professor J. H. MCGREGOR and Dr. R. H. BOWEN

1:45-2:35 p. m., Saturday: laboratory, 2:40-4:30 p. m., Saturday. Room 619 Schermerhorn. Fee \$16 each Session

The earlier part of this course is designed to give the student an elementary knowledge of the basic principles of biology and the general physiology of organisms. Protoplasm, the cell, unicellular organisms, plants and animals in relation to each other and to the inorganic world are the chief topics discussed in the Winter Session. The Spring Session is mainly devoted to the study of the structures and adaptations of some of the more important groups of animals, with dissection of types in the laboratory. Among the examples studied may be mentioned amoeba, paramecium, hydra, earthworm, lobster, grasshopper, clam, and frog. Practically equivalent to Zoölogy 1 in Columbia College. This course should be supplemented by Zoölogy e11-12 to form the one year of biology required by law for pre-medical students.

A text book will be used and collateral reading assigned.

Prerequisite: Elementary chemistry.

The class will be limited to forty five students.

**Zöology e11-12—Vertebrate zoölogy and evolution.** Lectures and laboratory. Credit I, IV. 2 points each Session. Professor J. H. MCGREGOR and Mr. A. F. HUETTNER

7-9:40 p. m., Monday: lecture, 7-7:50 p. m.; laboratory, 7:50-9:40 p. m. Room 619 Schermerhorn. Fee \$16 each Session

Equivalent to Zoölogy 2 in Columbia College and designed to follow Zoölogy e9-10 together with which it fulfils the requirement in biology for pre-medical students. The course begins with the study of the simpler vertebrates, and proceeds to the higher forms through study and dissection of types in ascending order of complexity. The more important laboratory types are amphioxus dogfish, pigeon and rabbit. The aim of the course is to trace the evolution of vertebrate structure, including that of man. Several of the later lectures are devoted to the chief theories regarding the method of evolution.

Prerequisite: Zoölogy e9-10 should precede this course or it may be taken concurrently with it. The class will be limited to forty-five students.



## PRACTICAL ARTS

### Officers of Administration for Extension Teaching in the School of Practical Arts

JAMES E. RUSSELL . . . . . *Dean of Teachers College*  
MAURICE A. BIGELOW . . . . . *Director of School of Practical Arts*

The School of Practical Arts of Teachers College, in cooperation with the University Department of Extension Teaching, offers certain extension courses of instruction to qualified students who have not matriculated in any part of Columbia University as candidates for degrees.

**Application.** A special application blank for admission to Practical Arts extension classes may be obtained from Desk E, Secretary's Office, Teachers College. *It will save delay in registration if this application is filed one or more weeks in advance of registration in September or February.*

**Registration for Practical Arts extension courses.** Information concerning such courses may be obtained at Desk E in the office of the Secretary of Teachers College daily, 9 a. m.-5 p. m., except Saturday afternoon; and also 7-8 p. m. each evening except Saturday, from September 21 to 30. *Written permission to register for Practical Arts courses is given only at Desk E;* but students complete registration at the office of the Registrar, University Hall, Columbia University.

**Credits.** Practical Arts extension courses which are announced as having Credit IV may be credited toward the Bachelor of Science degree if satisfactorily completed by non-matriculated students who afterwards matriculate in the School of Practical Arts. The possible credit in points is stated in the description of courses. Students who expect to matriculate should have their programs approved in advance in the office of the Director of the School of Practical Arts.

**Age limits.** The extension courses in Practical Arts *are not open to women under twenty-one years of age who are not residing with their parents or near relatives.* Women between twenty-one and twenty-five years must have their residence plans approved before registration by the Welfare Director of Teachers College.

**High-school preparation.** Men or women under twenty-one years who have not graduated from high school, or satisfactorily completed equivalent study, will not be admitted to extension classes which have Credit IV in the School of Practical Arts.

Women under eighteen years of age who are not high-school graduates will not be registered for the non-credit courses in household arts and fine arts.

An extension student may not register for more than 8 points per Session in any one department of the School of Practical Arts.

**Matriculated students** of Teachers College who wish to register for part-time programs should choose courses and sections from the Announcement of the School of Practical Arts and should not register as extension students.

**Changes of program,** such as dropping or adding courses, can be made only at the Registrar's office in University Hall, where the complete records are kept



on file. Permission to add or drop Practical Arts courses must be obtained from Desk E in the Secretary's Office of Teachers College before changing programs at the Registrar's office.

**Limited classes.** Many classes for practical work are limited as to number of students. Such classes are indicated by the letter L affixed to the course number (*e. g.*, Cookery e3L). Extension students must reserve places by personal application to the clerk in charge of extension classes, Desk E, Secretary's Office, Teachers College. Places will not be held for students who do not report to the instructor at the first lesson. In case of withdrawal from courses which have a required minimum registration, no fees will be returned unless a substitute wishes to register for the reserved place.

**Number of students required** in classes is indicated in descriptions of certain courses. Such classes may be discontinued if the required number of students are not registered before the time for the second lesson.

**Late registration.** Admission of extension students to Practical Arts classes with Credit IV will not be permitted after Saturday, October 8, for the Winter Session, and Saturday, February 18, for the Spring Session, unless for reasons of weight special permission for *registration without credit* is granted by the Director of the School of Practical Arts.

**First lessons.** Unless special dates are mentioned in the following pages, all courses in Practical Arts are on the regular schedule, beginning Thursday, September 29, 1921, for the Winter Session and Wednesday, February 8, 1922, for the Spring Session.

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The attention of students is called to the fact that the numbering of courses and many details in the statement of the classes and hours in Practical Arts are different from those found on the preceding pages.

## PRACTICAL SCIENCE

**Laboratory Ticket.** Students in all laboratory courses in the School of Practical Arts are required to purchase from the Bursar of Teachers College a laboratory breakage ticket, good for all science departments, price \$2. Unused coupons are redeemable at the end of any Session.

### *Biology*

**Biology e4L—Human biology.** Recitations, lectures, and laboratory work. Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Miss STACKPOLE and assistant

Section I—2:10–5 p. m., Monday and Wednesday, Winter Session

Section VI—2:10–5 p. m., Tuesday and Thursday, Spring Session. Room 421 T. C.

An introductory study of human structure, functions, development, and hygienic relations on a biological basis.

**Biology e4x—Biology for social hygiene.** Credit IV. 1 point. Fee \$8. Open only to women. Miss STACKPOLE

5:10 p. m., Monday, Spring Session. Room 421 T. C.

A series of fifteen illustrated lectures and laboratory demonstrations dealing with the anatomical, physiological, embryological, and bacteriological facts of biology which are necessary for understanding sex-education.

**Biology e51-52—Biological nature-study.** Lectures, laboratory work, field work, and reading. Credit IV. 2 points each Session. Fee \$16 each Session. Professor BROADHURST and Miss STACKPOLE

3:10-5 p. m., Monday and Wednesday

This course is a general introduction to the nature-study of common animals and plants. The Winter Session is chiefly plant nature-study (Professor Broadhurst) while the Spring Session is largely devoted to animals (Miss Stackpole). The names, life-histories, habits, relations to man, and other facts of popular interest concerning living things are emphasized. Trees and forestry, cultivated plants, wild flowers, birds, insects, domesticated animals, and other materials important in nature-study are selected for study.

**Biology e57L—Microbiology (including bacteriology).** Lectures and laboratory work. Credit IV. 2 points. Special fee \$20. Not charged at \$8 per point. Professor BROADHURST and assistant

Special section VII: 9-11:50 a. m., Saturday, Winter Session. Fifteen students required

This course deals with bacteria molds, yeasts, and other micro-organisms, selecting for most attention the forms which affect everyday life. The bacteriological problems of personal and public hygiene and sanitation are included. Many of the studies directly involve important problems of home economics.

Prerequisite: Elementary biological laboratory study.

### *Chemistry*

**P. A. Chemistry e3L—Brief course for beginners in household arts.** Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Miss CAMMACK and assistant

Section IV—7-9:50 p. m., Tuesday and Thursday, Winter Session. Room 400 T. C.

Section V-VI—9-11:50 a. m., Saturday, Winter and Spring Sessions. (Register for e3a-3b below)

Special limited sections; fifteen students required

This briefer course, selected from Chemistry 1-2, is intended for students of fine arts, physical education, music, household administration, clothing, and other majors which do not require Biochemistry 151 and Nutrition 171. Chemistry 3 prepares students for Chemistry 23, but not for Chemistry 31 and 41, for which the prerequisite is Chemistry 1-2, or 3 supplemented by 5.

**P. A. Chemistry e3a-3bL—Section V-VI of the above course.** 4 points for the year. Special fee \$20 each Session. Not charged at \$8 per point. Fifteen students required

**P. A. Chemistry e5L—General chemistry, advanced.** Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Miss CAMMACK

7-9:50 p. m., Tuesday and Thursday, Spring Session. Room 400 T. C.

Special limited class; fifteen students required

This course is for students who have finished elsewhere elementary chemistry equivalent to the year course given in approved high schools. Students who complete this course satisfactorily may be admitted to Chemistry 31 or 41.

Prerequisite: Approved high-school chemistry or Chemistry 3.

**P. A. Chemistry e23L—Brief course in household and food chemistry.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Miss FRANCIS and assistant  
2:10–5 p. m., Monday and Wednesday, Spring Session  
Limited class

This brief course is intended for students of nursing, household administration, clothing, and hygiene who have not time for all the courses of the series, Chemistry 1–2, 31 or 41, Biochemistry 151 Nutrition 171, which are required in majors in cookery and nutrition. It will include selections from Chemistry 31, and cannot be credited in addition to 31 or as a substitute for that course.

Prerequisite: Chemistry 3 or equivalent.

**P. A. Chemistry e25—Food industries.** Lectures, readings, and excursions to manufacturing establishments and reports on the processes inspected. Credit IV. 3 points. Fee \$24. Professor VULTÉ and Miss VANDERBILT  
Section I—2:10–4 p. m., Tuesday and Thursday, Winter Session  
Section II—10–11:50 a. m., Monday and Friday, Spring Session

The lectures describe the preparation of the various staple foods, from the raw state to the finished product in marketable form and include a discussion of the composition and cost of the available materials. Among the various subjects considered are the cereals, flours, meals, starch, bread, sugars, meats, edible oils, dairy products, tea, coffee, chocolate, alcoholic beverages, spices, and condiments. The processes of drying, salting, smoking, canning, and preserving are described. Adulteration and substitution are also considered.

Preceding or parallel: A course in general chemistry.

**P. A. Chemistry e31L—Household organic chemistry.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Professor VULTÉ, Miss VANDERBILT, and Mrs. MCGOWAN  
Section III—2:10–5 p. m., Tuesday and Thursday, Winter Session. Repeated as  
Section IV—Spring Session  
Limited sections. Room 405 Dodge

This course includes (a) lectures, demonstrations, and laboratory work on important organic compounds of the aliphatic and aromatic series; (b) laboratory study of the composition and properties of carbohydrates, fats, and proteins.

Prerequisite: General chemistry equivalent to Chemistry 1–2. Chemistry 3 does not admit to 31. Chemistry 25 is a desirable supplement to 31.

### *Hygiene*

**P. A. Hygiene e72—Personal and general hygiene.** Lectures, recitations, and required readings. Credit IV. 2 points. Fee \$16. Professor WILLIAMS  
11 a. m., Tuesday and Thursday, Winter Session

This course is intended for advanced students. It will consider the principles of hygiene, both personal and general, and their practical application to everyday life.

**P. A. Hygiene e75—Sanitary science.** Lectures and demonstrations. Credit IV. 2 points. Fee \$16. Professors WINSLOW and BROADHURST



Lecture, 4:10-5:30 p. m., Monday, Winter Session

Recitation, 5:10-5:40 p. m., Wednesday, Winter Session

This course includes a general survey of the fundamental principles of sanitary science and disease prevention and their application to water supply, milk, and general food supply, disposal of sewage and garbage, air supply, the problems of tenement and factory sanitation, and the spread and control of infectious diseases. Brief attention will also be given to the problems of rural hygiene, the preventive factors in constitutional disease, personal hygiene, and the social and economic aspects of health problems. The functions and methods of boards of health will be discussed and the use of vital and sanitary statistics.

Recommended preparatory or parallel course: Biology 57.

**P. A. Hygiene e76a—Industrial hygiene.** Lectures and field work. Credit IV. 1 point. Fee \$8

Hours for field work and lectures to be arranged

This course deals with the dangers to life and health in factories and workshops, and with the practical work of sanitary inspection as applied to industrial establishments. It will include a brief discussion of factory accidents, a consideration of industrial poisonings from lead, phosphorus, and other metals, and from the inhalation of noxious gases, and with the effect of factory dust and vitiated air upon health, and particularly upon the prevalence of tuberculosis. Emphasis will be laid upon possible preventive measures and the inspection work will furnish a basis for judging sanitary conditions.

Prerequisite: Hygiene 75.

### *Mathematics*

**P. A. Mathematics e31-32—Industrial mathematics.** Credit IV. 2 points each Session. Fee \$16 each Session. Mr. BRECKENRIDGE

11 a. m.—12:50 p. m., Saturday, Room 211 T. C.

This course is designed especially for teachers of mathematics or mechanic arts in technical or trade schools.

Prerequisite: College entrance mathematics or an equivalent experience in mechanic arts.

### *Practical Arts Physics*

**P. A. Physics e1L—General course in applied physics.** Lectures, excursions, and laboratory work. Credit IV. 4 points. Fee \$32. Mr. GOOD and assistant

Lecture, 11 a. m., Monday and Wednesday, Winter and Spring Sessions

Section V—3:10-5 p. m., Monday and Wednesday, Winter Session, Repeated as Section VI—Spring Session

Limited sections. Room 408 T. C.

A general course for beginners, including a series of exercises in the study of practical appliances. It serves as an introduction to the principles and operation of the mechanisms and phenomena of physical experience.

**P. A. Physics e31L—Household physics.** Lectures, excursions, and laboratory work. Credit IV. 2 points. Fee \$16. Mr. GOOD and assistant

Section I—9-11:50 a. m., Thursday, Winter Session

Section II—9-11:50 a. m., Friday, Spring Session

Limited sections. Room 408 T. C.

The purpose of this course is to teach how to use and care for the equipment of homes and institutions, with particular reference to mechanical, electrical, and heating devices. It will show how modern appliances may be either nuisances or sources of comfort, according as one can or cannot make intelligent use of them. The course will deal with water supply,



plumbing, sewers, heating, ventilation, refrigeration, gas supply, stoves, lamps, electric lighting, cooking and heating, telephone, elevators and dumbwaiters, machinery for dishwashing, laundry, and cleaning, fire extinguishers, and general repairs.

Prerequisite: Physics I.

## FINE ARTS

Most courses in Fine Arts are given in Rooms 426-435 Macy Building of Teachers College. A complete schedule of classes will be posted near the office (Room 431 Macy).

For all courses announced as "limited" students must reserve places at the time of registration, see p. 134. Any course or section with less than fifteen students may be discontinued and the fees returned after the first lesson.

Teachers and other mature workers who have completed two or more years of study in advance of high school may be admitted to certain sections and courses listed only in the *Announcement of the School of Practical Arts*. Apply at Desk E, Secretary's Office, Teachers College.

### *Art Appreciation and History*

**Fine Arts e69-70—Art appreciation. History of art.** Lectures, reports and required reading. Credit IV. 2 points each Session. Fee \$16 each Session. Professor Dow

4:10-5:30 p. m., Tuesday, Horace Mann Auditorium

Appreciative study of painting, sculpture, architecture, and design, in historical development. Lantern illustrations.

First part of course: nature of space arts, principles common to them all; art structure, composition of line and mass, color-theory, art criticism.

In the historical study, general chronological order is followed, but facts as to dates and periods are to be derived from the text-book, Reinach's *Apollo*. Reading is tested by written exercises.

In connection with museum and library studies, reports will be required upon some of the following subjects: The art of the American Indians, especially of those of the Southwest, Peruvian textiles and handicrafts, art of the Aztecs, Maya architecture and decoration, Egyptian painting and handicrafts, Coptic textiles, early Greek, Cypriote and Minoan design, Mohammedan design and craftwork, Gothic buildings, ancient and modern, Gothic sculpture, early Italian paintings, American and present-day arts. These reports may be illustrated with small photographs, tracings, or sketches.

### *Art Structure*

**Fine Arts e1L—Art structure A.** For teachers, designers, illustrators, craftsmen, and painters. Lectures and studio work. Credit IV. 3 points. Fee \$24. Professors DOW and CORNELL, Miss TANNAHILL, Miss RUFFINI, and Mr. HEINS

Section VI—2:10-5 p. m., Friday and Saturday, Winter Session

Section VII—7:10-10 p. m., Monday and Wednesday, Winter Session

Special limited sections, fifteen students required

Section IX-X—Saturday, throughout the year. (Register for Fine Arts era and e1b below.)

The courses in Art Structure (Fine Arts 1-2) are the foundation for all art work. They are required of all art students and there are no equivalents.

All visible art is built of *three* elements,—Line, dark-and-light and color. Experience in arranging and combining these in simple ways brings out creative power and trains the appre-

ciations. Such experience is valuable alike to the artist, craftsman, teacher and the non-professional.

Pursued progressively the courses in art structure are introductory to drawing, painting, modeling, illustrating, house decoration, costume design, textile design, furniture and metal design and applications of art generally.

Outline: 1. Ways of arranging and combining line, dark-and-light and color to produce fine quality—spacing, proportion, subordination, rhythm. 2. Original design,—exercises with brush and ink, charcoal, colored crayon, water colors. 3. Study of fine historic examples to illustrate each step.

**Fine Arts e1a-1b—Credit IV.** 3 points for the year. Fee \$12 each Session  
2:10-5 p. m., Saturday

Description and reading as in Fine Arts e1, which is equivalent.

**Fine Arts e2L—Art structure B.** Continuation of Fine Arts 1. Lectures and studio work. Credit IV. 3 points. Fee \$24. Professors DOW and CORNELL, Miss TANNAHILL and Miss RUFFINI

Section VI—2:10-5 p. m., Friday and Saturday, Spring Session

Section VII—7:10-10 p. m., Monday and Wednesday, Spring Session

Special limited sections; fifteen students required

Principles of composition; line and dark-and-light harmonies in pattern and in landscape; color theory with application; harmony of color in design, pictures, costumes, the home. Fine historic examples used to illustrate each step. Special study, under guidance, of museum art collections.

Reading as in Fine Arts 1.

Prerequisite: Fine Arts 1.

**Fine Arts e3-4—Freehand drawing.** Credit IV. 2 points each Session.  
Fee \$16 each Session. Mr. COX and assistant

Section II—4:10-6 p. m., Tuesday and Thursday

Line drawings of common objects. The application thereto of simple perspective rules. Composition and expression. Tone drawing in two, three and more values. Drawing from casts and flat examples. Analysis in light and dark. Sketching of foliage, flowers and natural objects.

Books of reference—Norton's *Freehand Perspective*, Hunt's *Talks on Art*.

**Fine Arts e3a-3b—Freehand drawing.** Credit IV. 1 point each Session.  
Fee \$8 each Session. Mr. COX

4:10-6 p. m., Friday

Outline as above. Reading as in Fine Arts e3-4.

**Fine Arts e49-50—Art structure Ca.** Lectures and studio work. Credit IV.  
1½ points each Session. Special fee \$15 each Session. Not charged at \$8 per point. Professor DOW and Mr. HECKMAN

9-11:50 a. m., Saturday. Three hours outside work per week

An abridged course in theory and principles of art. (See Fine Arts 1, 2, 51-52.) For teachers, designers, illustrators, craftsmen, and painters.

Exercises in composition. Brush drawing and painting; charcoal studies; color in theory and practice. Assigned reading and museum work.

**Fine Arts e25-26—Clay modeling and pottery.** Credit IV. 2 points each Session. Special fee \$20 each Session. Not charged at \$8 per point. Mr. UPJOHN

Section III—10-11:50 a. m., Tuesday and Thursday

**Clay modeling:** Modeled and incised tiles and panels. Moldings and medallions in low and high relief. Sketching of small figures in clay. Modeled heads, from casts. Colored relief, casting in plaster. Mold-making: one-piece, chip-and-piece, and gelatine molds.

**Pottery:** Making of shapes. Coiling, building, pressing, casting. Making of pottery molds. Decoration with underglaze colors. Sprigging, biscuit-firing, glazing, and gloss firing.

**Reading:** Cox's *Pottery*; Binn's *Potter's Craft*; Jewitt's *History of Pottery*.

**Prerequisite:** Fine Arts 1, 2.

**Fine Arts e53-54—Drawing and painting.** Credit IV. 2 points each Session. Special fee \$20 each Session. Not charged at \$8 per point. Mr. HECKMAN  
Section II—2:10-4 p. m., Wednesday and Friday

Expression by line, modeling in line, shading, gradation, values, perspective, modeling in tone, technique of charcoal. Painting in oil and water-color, figures, animals, landscapes. Copying in museums.

**Reading:** Knowlton's *Hints on Sketching from Nature*; Ross' *Drawing and Painting*.

**Prerequisite:** Fine Arts 3-4 or equivalent.

**Fine Arts e53a-54a—Drawing and painting.** Credit IV. 1 point each Session. Special fee \$10 each Session. Not charged at \$8 per point. Miss RUFFINI  
9-10:50 a. m., Saturday

Freehand drawing in charcoal and pencil from objects, cast, still life, and costumed figure. Shading, gradation, values, texture, and tone modeling. Painting in oil and water color.

**Prerequisite:** Fine Arts 3-4 or equivalent.

**Fine Arts e83a-84a—Painting.** Credit IV. 1½ points each Session. Special fee \$15 each Session. Not charged at \$8 per point. Professor MARTIN  
9-11:50 a. m., Saturday

Still life painting, landscape painting, work from costumed model.

Advanced course following Fine Arts e49-50 and e53a-54a.

### *House Design and Decoration*

**Fine Arts e13L—Home furnishing.** Lectures, studio work and visits to museums and shops. 2 points. Fee \$16. Mrs. TREGANZA  
Section I—2:10-4 p. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session. Room 505 Dodge

A survey and practical organization of this subject for homemakers, teachers and decorators. Studies in art structure and design in relation to the furnishing of the home. Good spacing, tone relations, color arrangements. An introduction to architectural elements of interiors, historic periods, decorative treatments and materials. Students required to make simple compositions and sketches—and to have well arranged note-books and collections of illustrative material.

**Books of reference:** Eberlein, McClure and Holloway's *The Practical Book of Interior Decoration*, Hamlin's *Enjoyment of Architecture*, Architectural Magazines, Dow's *Composition*.

**Recommended parallel:** Fine Arts 1.

**Fine Arts e57-58—Furniture and metalwork design.** Credit IV. 3 points each Session. Special fee \$30 each Session. Not charged at \$8 per point. Mr. COX  
9-11:50 a. m., Tuesday and Thursday

Art structure as shown in the development of furniture. Influence of materials and methods upon construction. Historic styles and modern tendencies. Use of metal enrichment and its suitability for fittings. Designing of simple pieces in old and new styles. Designing of handles, hinges and other metal fittings.

**Books of reference:** Heineman's *The Little Books on Old Furniture*, McQuoid's *The History of English Furniture*, Singleton's *Furniture of Our Forefathers*, Gardiner's *Ironwork*, Day's *Enameling*.

**Prerequisite:** Fine Arts 1, 2, and one course in mechanical drawing.



*Costume Design*

**Fine Arts e21a-21bL—Costume design.** Credit IV. 3 points for the year.  
 Fee \$12 each Session. Miss NORTHRUP and assistant  
 9-11:50 a. m., Saturday, throughout the year

Study of line, dark and light, and color in relation to costume. Designing for various occasions. Pencil, water-color, and tempera.

Prerequisite: Fine Arts 1. Recommended parallel: Fine Arts 2 and 97.

*Art Industries*

**Metalworking e1—Hammered metal.** Credit IV. 2 points. Special fee \$20. Not charged at \$8 per point. Mr. HEINS  
 9-10:50 a. m., Tuesday and Thursday, Winter Session

Instruction in hammered and raised work. Processes include forming of bowls, trays, boxes, candlesticks, furniture fittings, and other shapes, and their enrichment by repoussé; coloring of metals by patinas. Design is required in planning the projects.

Students should elect Fine Arts 1 parallel.

**Metalworking e2—Silversmithing.** Shopwork. Credit IV. 2 points.  
 Special fee \$20. Not charged at \$8 per point. Mr. HEINS  
 9-10:50 a. m., Tuesday and Thursday, Spring Sessions. Rooms 26 and 243  
 Macy

Students should elect Fine Arts 2 parallel.

Prerequisite: Metalworking ex.

**Metalworking e5-6—Jewelry.** Shopwork. Credit IV. 2 points each Session. Special fee \$20 each Session. Not charged at \$8 per point. Mr. HEINS  
 Section I—2:10-4 p. m., Monday and Wednesday  
 Section II—4:10-6 p. m., Monday and Wednesday  
 Each section requires fifteen students. Rooms 26 and 243 Macy

Instruction in making buckles, fobs, chains, necklaces, pendants, rings, setting of stones, casting of silver; polishing and finishing of metals; coloring by chemical and electrolytic methods. Design is required in planning projects. Part of the course has been simplified and rearranged for students in Occupation Therapy.

Prerequisite: Metalworking 1, 2; and a design course, which may be taken parallel.

*Mechanical Drawing*

**Drawing e3-4—Mechanical drawing, briefer course.** Credit IV. 2 points each Session. Fee \$16 each Session. Mr. COX  
 4:10-6 p. m., Monday and Wednesday, Winter and Spring Sessions

Study of the foundation of pattern. Construction of geometric figures, projection of simple solids and the development of surfaces. Application of mechanical drawing to house decoration in the setting out of plans, elevations and details.

Books of reference: Day's *Pattern Design*, Day's *Ornament and Its Application*, Meyer's *Handbook of Ornament*.

**Drawing e31-32—Mechanical and freehand perspective drawing.**  
 Credit IV. 2 points each Session. Fee \$16 each Session. Mr. UPJOHN  
 4:10-6 p. m., Tuesday and Thursday, Winter and Spring Sessions

Intended to meet the requirements of students in household furnishing or interior decoration, costume design, architecture, and those interested in perspective drawing in general. It consists of making drawings of simple objects, interiors of rooms, showing the location of doors, windows, furniture, rugs. Pencil and pen and ink rendering.



**Drawing e51-52L—Mechanical drawing for teachers.** Credit IV. 2 points each Session. Fee \$16 each Session. Mr. PANUSKA

7-9 p. m., Monday and Wednesday. Special limited class; fifteen students required

This course is intended for teachers of drawing and industrial arts. It will deal with subject-matter, technique, and the approved methods of teaching mechanical drawing in schools. Instruction will be given in lettering, dimensioning, projections, intersections, development of surfaces, isometric and perspective drawing and shadows, machine and structural details, modern drawing-room conventions, making of tracings and blue prints.

**Drawing e61-62L—Advanced mechanical drawing for teachers.** Credit IV. 2 points each Session. Fee \$16 each Session. Mr. PANUSKA

1:10-4 p. m., Saturday. Special limited class; fifteen students required

First, the theory underlying all mechanical drawing is studied, with practical examples. This is then applied to type problems such as would be taken up in advanced classes in high, vocational and trade schools. Also, machine parts, cams, gears, screws, engine details, etc. are studied and supplemented by lectures on shop processes and teaching method.

Other courses in fine arts described in the *Announcement of the School of Practical Arts* may be open to extension students whose general and technical preparation is satisfactory to Professor Dow and the Director of the School. Apply first at Desk E in the Secretary's Office in Teachers College. Courses and sections so opened will be charged at a special rate of \$10 per point.

### HOUSEHOLD ARTS

Courses in this department are grouped under Cookery, Nutrition and Food Economics, Textiles and Clothing, Household Fine Arts, Household Administration.

Teachers and other mature workers who have completed two or more years of study in advance of high school may be admitted to certain sections and courses listed only in the *Announcement of the School of Practical Arts*. Apply at Desk E, Secretary's Office, Teachers College.

#### *Cookery*

Most courses in Foods and Cookery are given in Rooms 200-214 Grace Dodge Building of Teachers College. A complete schedule of courses will be posted near the office (Room 211 Dodge)

*Costume* for foods and cookery laboratories: Students are requested to wear white cotton clothing; plain skirt; tailored waist; plain white collar; no color in ties or bows of neckwear; long plain white apron with bib (for laboratory only); little, if any jewelry

*Limited sections:* For all "limited" courses (indicated by L following the number, e. g., **Cookery e2L**) students must reserve places before completing registration. See p. 134

Any course or section with less than fifteen students may be discontinued and the fees returned after the first lesson

**Cookery e1—Technology of cookery and food economics.** Lectures and demonstrations. Credit IV. 2 points. Fee \$16. Professor VAN ARSDALE and others

Section I—1:10-2 p. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

Section III—4:10-6 p. m., Friday, Winter Session. (For advanced students only.) Repeated as

Section IV—Spring Session

**Cookery e2L—Elements of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$30. Not charged at \$8 per point

Section I—2:10-5 p. m., Tuesday and Thursday, Winter Session. Repeated as Section II—Spring Session

Limited sections

This course is for students *not majoring in foods and cookery*, and for *inexperienced housekeepers*. It includes a general survey of the elementary principles of cookery, with an introduction to planning and serving meals in the home. Elementary chemistry, physics, and biology are desirable preliminary or parallel courses. This course *does not satisfy the prerequisites for other courses of cookery*, unless so stated in the announcement, *nor may it be credited in addition to Cookery 3 or 4I.*

**Cookery e3L—Principles of cookery.** Lectures and laboratory work. Credit IV. 3 points. Special fee \$30. Not charged at \$8 per point. Miss STONE and assistant

Section VII-VIII—Saturday, throughout the year. (Register for Cookery e3a and e3b below)

Section IX—7-9:50 p. m., Monday and Wednesday, Winter Session. Repeated as

Section X—Spring Session

Limited sections

The purpose of this course is to give a working knowledge of the general principles of cookery. It deals with the selection, preparation and the methods of cooking the various types of food that are ordinarily served in the home and which are used in the *teaching* of elementary cookery. This course is fundamental for all teachers of cookery.

Preceding or parallel: General chemistry and cookery I.

**Cookery e3a-3bL**—Section VII-VIII of above course. Credit IV. 3 points for the year. Special fee \$15 each Session. Not charged at \$8 per point  
9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins October 1

**Cookery e41L—Home cookery and table service.** Lectures and laboratory work. Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Mrs. GUNN and Miss BARBER

Section V-VI—Saturday, throughout the year. (Register for Cookery e41a and e41b below)

Section VII—7-9:50 p. m., Monday and Wednesday, Winter Session. Repeated as

Section VIII—Spring Session

Limited sections

The purpose of this course is to give opportunity for practice in home cookery. It will include the study, planning, cooking and serving of breakfasts, luncheons, dinners, and suppers; also various methods of preparation and garnishing. It is intended for students who are planning to teach or to enter the field of household administration.

Prerequisite: Cookery 3 and Chemistry 1-2.

Preceding or parallel: Cookery 1, Chemistry 25, and Biology 4. Nutrition 1 is strongly recommended as a parallel. Administration 21 is also recommended.

**Cookery e41a-41bL**—Section V-VI of above course. 2 points each Session. Special fee \$20 each Session. Not charged at \$8 per point  
9-11:50 a. m., Saturday, Winter and Spring Sessions

**Cookery e71L**—Elementary cookery for invalids. Lectures, demonstrations, and laboratory work. Credit IV. 2 points. Special fee \$20. Not charged at \$8 per point. Miss PEACOCK

Section I—9-11:50 a. m., Wednesday, Winter Session

Limited class

This course is intended primarily for students of nursing and physical education who wish a brief course in the principles of cookery applicable to the care of the sick.

**Cookery e75L**—Large quantity cookery. Lectures and laboratory work. Credit IV. 4 points. Special fee \$40. Not charged at \$8 per point. Miss BOHN and Miss DAVIS

Section III—7-9:50 p. m., Monday and Wednesday, Winter Session. Begins October 3. Repeated as

Section IV—Spring Session. Begins February 8

Limited class

This course is designed to give practice in handling materials in large quantities for the large family or for small and large institutions, as hospitals, sanitariums, college dormitories, restaurants, etc. The course will include some practice in planning and serving of luncheons of varying costs to small groups as an introduction to larger work. The problem of minimum cost luncheons will be considered with reference to the demands of the cafeteria, the industrial plant, and the school.

Prerequisite: Cookery 3, 4, and 41, or equivalents. Parallel: Courses in Administration and Nutrition.

Other and more advanced courses in cookery, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to extension students whose technical preparation is satisfactory to Professor VAN ARSDALE. Courses and sections so opened to extension students will be charged at a special rate of \$10 per point

Special short courses in cookery will be offered between September, 1921, and May, 1922. Circulars of information may be obtained from the Secretary of Teachers College in September, 1921, and February, 1922

### *Nutrition and Food Economics*

**Nutrition e1**—Elements of nutrition and dietetics. Lectures, recitations, and laboratory work. Credit IV. 2 points. Fee \$16. Miss SANDELS and Professor SHERMAN

Section III—9-11:50 a. m., Saturday, Winter Session. Repeated as

Section IV—Spring Session

This course describes very simply the essentials of an adequate diet, and the nutritive properties of common food materials. The application of such knowledge to the feeding of individuals and family groups is discussed, with special reference to limitations of cost. Esti-



mations of food values and preparation and service of practical dietaries constitute the laboratory work.

Prerequisite: An elementary knowledge of cookery equivalent to Cookery 3. Students who have not previously studied chemistry are strongly advised to take Chemistry 1 or 3 in the Winter Session as preparation for this course in the Spring Session.

### *Textiles and Clothing*

Most courses in Textiles and Clothing are given in Rooms 301-311 Grace Dodge Building of Teachers College. A complete schedule of classes will be posted near the office (Room 309 Dodge)

*Limited sections:* For all courses announced as "limited" students must reserve places at the time of registration. See p. 134. Any course or section with less than fifteen students may be discontinued and the fees returned after the first lesson

Teachers and other mature workers who have completed two or more years of study in advance of high school may be admitted to certain sections and courses listed in the *Announcement of the School of Practical Arts*. Apply at Desk E, Secretary's Office, Teachers College

**Textiles e31b—Textile economics.** Lectures and laboratory work. Credit IV. 1 point supplementary to other textile work. Fee \$8. Professor FALES  
Section I—2:10-4 p. m., Wednesday, Winter Session. Repeated as  
Section II—Spring Session

This course concerns itself with the identification and grading of textile materials, their names, kinds, prices, and widths; considers variation of weave in regard to beauty and strength; the use and value of cotton, silk, wool, and linen for clothing and household furnishing.

**Clothing e33—History of costume.** Lectures. Credit IV. 2 points. Fee \$16. Professor FALES

Section I—11-11:50 a. m., Tuesday and Thursday, Winter Session

Section II—10-10:50 a. m., Tuesday and Thursday, Spring Session

This course includes a survey of ancient Egyptian, Grecian, early and modern French costumes. It aims to give practical information for the use of students and teachers of dressmaking, costume design, and fashion illustration.

**Clothing e5L—Elementary clothing and handwork.** For teachers. Laboratory work. Credit IV. 3 points. Fee \$24. Miss EVANS

Section IX-X—Saturday, throughout the year. Begins October 1. (Register for e5a-5bL below)

#### Limited sections

This course includes practice in the following: use of the sewing machine and its attachments; making of fundamental stitches; use of commercial patterns; hand and machine sewing applied to undergarments and a simple wash dress; darning, patching, and simple embroidery.

Students provide required materials; estimated cost \$15, depending upon the quality of materials used.

This course, or its equivalent, is prerequisite to all dressmaking courses.

Preceding or parallel: Fine Arts 1.

**Clothing e5a-5bL—Section IX-X of Clothing 5.** Credit IV. 3 points for the year. Fee \$12 each Session

9-11:50 a. m., Saturday, Winter and Spring Sessions



**Clothing e15L—Drafting and dress design.** For teachers. Laboratory work. Credit IV. 3 points. Fee \$24. Miss BALDT

Section IX-X—Saturday, throughout the year. Begins October 1. (Register for e15a-15bL below)

**Limited sections**

This course gives practice in the making of patterns by drafting, modeling, and designing. Foundation patterns of a shirtwaist, shirtwaist sleeve, skirt, fitted waist and fitted sleeve are drafted to measure, cut in materials, and fitted. From these other patterns are designed and modeled in paper muslin and cheesecloth. Good design is emphasized.

Students provide required materials; estimated cost \$15, depending upon the quality of materials used.

This course is prerequisite to all dressmaking courses.

**Clothing e15a—15bL—Section IX-X of Clothing 15.** Credit IV. 3 points for the year. Fee \$12 each Session

9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins October 1

**Clothing e35L—Dressmaking, elementary.** For teachers. Laboratory work. Credit IV. 3 points. Fee \$24. Miss BALDT

Section VII-VIII—Tuesday and Thursday evenings throughout the year. (Register for Clothing e35a-35b below)

Section IX-X—Saturday, throughout the year. (Register for e35a and 35b below)

**Limited sections**

This course includes the cutting and making of a middy blouse, a tailored silk shirt, a wool skirt, and an afternoon silk dress. Commercial patterns as well as those made and fitted in Clothing 15 are used.

Students provide material; estimated cost \$30-\$40, depending upon the quality of materials used.

Prerequisite: Clothing 5, 15, Fine Arts 1.

**Clothing e35a-35bL—Special sections of Clothing 35.** Credit IV. 3 points for the year. Fee \$12 each Session

Section VII-VIII—7:30-9:20 p. m., Tuesday and Thursday, Winter and Spring Sessions

Section IX-X—9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins October 1

**Clothing e35x—Tailoring demonstrations.** For teachers. Laboratory work. Credit IV. 1 point if taken in connection with Clothing 35 or 55. Fee \$8. Miss BALDT and Mr. NICLOSSI

Section I—6:45-8:45 p. m., Tuesday and Thursday. Begins November 3  
Repeated as

Section II—Spring Session. Begins February 14

**Clothing e40a-40b—Children's clothing.** For teachers. Laboratory work. Credit IV. 3 points for the year. Fee \$12 each Session. Miss BALDT

9-11:50 a. m., Saturday, throughout the year. Begins October 1

This course provides instruction in the cutting, fitting and making of clothing for children, both boys and girls, and for misses. Emphasis is laid upon good design, the choice of materials, the use of commercial patterns, and the construction of garments.

Prerequisite: Clothing 15 and 35 or equivalent.

**Clothing e27L—Millinery, elementary.** For teachers. Laboratory work. Credit IV. 3 points. Fee \$24. Mrs. TOBEY and Mrs. SMITH

Section VII—VIII—Tuesday and Thursday evenings throughout the year. (Register for Clothing e27a-27b below)

Section IX—X—Saturday, throughout the year. (Register for Clothing e27a-27b below)

Limited sections

This course includes practice in the making and covering of frames and in the preparation of trimmings, such as wiring bows, shirrings, puffings, milliners' folds. Students provide material subject to the approval of the instructor.

**Clothing e27a-27b—Special sections of Clothing 27.** Credit IV. 3 points for the year. Fee \$12 each Session

Section VII—VIII—7:30-9:30 p. m., Tuesday and Thursday, Winter and Spring Sessions. Begins October 18

Section IX—X—9-11:50 a. m., Saturday, Winter and Spring Sessions. Begins October 1

### *Courses for Home Workers*

(Not credited towards degrees)

**Clothing e1L—Sewing, elementary.** Laboratory work. Fifteen three-hour lessons. No credit. Fee \$20. Miss SCOTT

9-11:50 a. m., Wednesday, Winter Session. Begins October 5

Limited class

This course includes practice in hand and machine sewing and in the cutting, fitting, and making of undergarments. Students provide required materials.

**Clothing e31L—Drssmaking.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$20. Miss SCOTT

Section I—10-11:50 a. m., Monday and Friday, Winter Session. Begins October 10. Repeated as

Section II—Spring Session. Begins February 10

Section III—9-11:50 a. m., Wednesday, Winter Session. Begins October 5

Section V—2:10-4 p. m., Tuesday and Thursday, Winter Session. Begins October 11. Repeated as

Section VI—Spring Session. Begins February 9

Limited sections

This course includes the cutting, fitting, and making from patterns, shirtwaists and unlined dresses in cotton, silk or wool. Students provide materials; estimated cost \$10-\$35, depending upon the quality of materials used.

**Clothing e71L—Dressmaking, advanced.** Fifteen three-hour lessons. No credit. Fee \$20. Miss SCOTT

Section II—9-11:50 a. m., Wednesday, Spring Session. Begins February 8

Limited class

Students provide required materials; estimated cost \$25-\$50, depending upon the quality of materials used.

**Clothing e7L—Millinery, elementary.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$20. Mrs. NELSON and Mrs. SMITH

Section I—10-11:50 a. m., Tuesday and Thursday, Winter Session. Begins October 11

Section II—2:10-4 p. m., Tuesday and Thursday, Spring Session. Begins February 9

Section III—10-11:50 a. m., Monday and Friday. Winter Session. Begins October 10. Repeated as

Section IV—Spring Session. Begins February 10

Section V—2:10-4 p. m., Monday and Friday, Winter Session. Begins October 10. Repeated as

Section VI—Spring Session. Begins February 10

This course includes the making of frames in wire and willow; the covering of hats in silk, velvet, lace, and straw; and demonstrations in trimming. Students provide materials.

**Clothing e17L—Millinery, advanced.** Laboratory work. Twenty-three two-hour lessons. No credit. Fee \$20. Mrs. NELSON and Mrs. SMITH

Section II—10-11:50, Tuesday and Thursday, Spring Session. Begins February 9

Section IV—2:10-4 p. m., Tuesday and Thursday. Begins February 9

Prerequisite: Clothing e7

Other courses in textiles and clothing, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to extension students whose general and technical preparation is satisfactory to the department. Courses and sections so opened will be charged at a special rate of \$10 per point.

#### *Household Administration and Economics*

Teachers and other mature workers who have completed two or more years of study in advance of high school may be admitted to certain sections and courses listed in the *Announcement of the School of Practical Arts*. Apply at Desk E, Secretary's Office, Teachers College.

**Administration eA—Principles of household administration.** Lectures. 1 point each Session. Fee \$8 each Session. Professor GUNTHER and Miss FISHER

Section I—1:10 p. m., Wednesday, Winter and Spring Sessions

This course is a general survey of the field of household administration, giving the background of activities in the household, and the meaning of homemaking at the present day.

**Administration e1L—Housewifery and household management.** Discussions, observation, and practical work. Credit IV. 2 points. Fee \$16. Miss BALDERSTON and assistant

Section I—9-10:50 a. m., Monday and Friday, Winter Session. Repeated as Section II—Spring Session

Section III—2:10-4 p. m., Monday and Wednesday, Winter Session. Repeated as

Section IV—Spring Session. Room 53 Dodge

Limited sections

This course treats of the kinds of work needed in various parts of the household and the systematic planning of the daily routine in care of rooms and their equipment. Special topics



are: tools and materials; labor-saving appliances; care, cleaning, and repair: household efficiency; schedules of work; household service.

**Administration e11L—Domestic laundering.** Discussions, demonstrations, and laboratory work. Credit IV. 2 points. Fee \$16. Miss BALDERSTON and assistant

Section I—9-11:50 a. m., Tuesday, Winter Session. Repeated as

Section II—Spring Session

Limited sections. Rooms 53 and 57 Dodge

The course presents the principles and processes included in laundry work; space, equipment, and materials required for work in the home; machinery for domestic work, its cost, care, and uses; the processes of laundering; care of fine work, embroidery, laces; system in the domestic laundry; the household and the commercial laundry.

Recommended preparatory: Chemistry 3, Administration 1.

**Administration e21L—Buying of household supplies.** Credit IV. 2 points. Fee \$16. Miss FISHER and Miss BALDERSTON

Section I—2:10-3 p. m., Tuesday and Thursday, Winter Session. Repeated as

Section II—Spring Session

Limited sections

This course deals with the problems of purchasing household supplies. It presents the ethics of purchasing and the principles of buying household appliances and furnishings.

Prerequisite: Administration A and 1.

**Household Economics e79—Introduction to household economics.** For public health nurses. Credit IV. 2 points. Fee \$16. Professors ANDREWS, ROSE, FALES, Miss HARRIET TOWNSEND and Miss BALDERSTON

Section I—2:10-4 p. m., Thursday. Winter Session. Repeated as

Section II—Spring Session

This course gives a brief survey for public health nurses of family and household problems of a social and economic nature; standards of living and their maintenance; family finances and readjustments in terms of the budget; problems of food and adequate nutrition, of clothing and household furnishings, of household equipment and practical housekeeping processes.

Other courses in administration and household economics, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to extension students whose general and technical preparation is satisfactory to Professors GUNTHER and ANDREWS. Courses and sections so opened will be charged at a special rate of \$10 per point.

## INDUSTRIAL ARTS

**Art Industries**—For courses in hammered metal, silversmithing, jewelry and color printing, see under Fine Arts

**P. A. Mathematics e31-32—Industrial mathematics.** Credit IV. 2 points each Session. Fee \$16 each Session. Mr. BRECKENRIDGE

11 a. m.-12:50 p. m., Saturday

Other courses in industrial arts, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to mature extension students whose technical preparation is satisfactory to the instructor



## MUSIC AND SPEECH

*General Art of Music*

**P. A. Music e21-22—Epochs in the development of music.** Lectures with musical illustrations and recitals. 2 points each Session. Credit IV. Fee \$16 each Session. Professor FARNSWORTH and Miss WIETHAN

4:10-5:30 p. m., Thursday. Room 502 Horace Mann School

A survey of the history of music with reference to those events that affect our present musical interests.

**P. A. Music e41-42—Musical literature.** Credit IV. 2 points each Session. Fee \$16 each Session. Professor FARNSWORTH and Miss WIETHAN

3:10-4 p. m., Tuesday and Thursday. Room 502 Horace Mann School

The aim of this course is to aid in forming a standard of taste in music by utilizing the unusual musical opportunities that the city affords. The work consists of musical illustrations, with discussions and practice in reporting.

**P. A. Music e25-26—Sight singing.** Credit IV. 2 points each Session. Fee \$16 each Session. Mr. ANDREWS

4:10-5 p. m., Monday, Wednesday and Friday. Room 118 T. C.

Elementary musical notation. The acquirement of speed in the singing of melodies at sight.

**P. A. Music e13-14—Tone thinking.** Music dictation and reading, including harmonic and melodic material. Credit IV. 2 points each Session. Fee \$16 each Session. Mr. ANDREWS

3:10-4 p. m., Monday, Wednesday, and Friday. Room 118 T. C.

This course is basic for all singers, players, and music teachers. It gives practice in describing, in writing and orally, what is heard in music.

Prerequisite: Either Music 25-26 or the ability to write from hearing a simple phrase of music.

**P. A. Music e33-34—Introductory harmony.** Credit IV. 2 points each Session. Fee \$16 each Session. Mr. ANDREWS

2:10-3 p. m., Monday, Wednesday, and Friday. Room 118 T. C.

This course includes triads, inversions, and dominant seventh chords and their application in melody, harmonizing, and original composition.

Prerequisite: Either Music 25-26 or the ability to write from hearing a simple phrase of Music.

*Technical Music Courses*

**P. A. Music e15-16—Voice: first year.** Individual work in groups limited to four. Credit IV. 2 points each Session. Special fee for Sections II and III \$40 for each Session. Not charged at \$8 per point

Section II—Room 605 Dodge. Miss DASCHBACH

Section III—Room 706 Dodge. Mr. JOLLIFFE

Hours to be arranged

**P. A. Music e35-36, e55-56, e75-76—Advanced courses in voice.** Hours to be arranged. Given in groups; under same conditions as to credit, hours, and fees as for the same instructors in Music e15-16. Consult Professor FARNSWORTH

**P. A. Music e27-28—Piano: first year.** Credit IV. 2 points each Session. Requires at least six hours' practice a week. Special fee \$40 for each Session. Not charged at \$8 per point. Mrs. COWL

(a) Individual work in groups limited to four. Once a week

The work presents the technique of playing, sight-reading, accompanying and drill in methods for concentration and practice, requiring, as a result, the ability to play at least a dozen selections from memory.

(b) Class lessons combining all groups. Once a week, Room 118 T. C.  
4:10-5 p. m., Tuesday, and other hours to be arranged with the instructor

The work includes ear training, interpretation, with examples by both students and instructor. Analyses and estimates are made of a large number of selections.

**P. A. Music e37-38, e57-58, e67-68—Advanced courses in piano.** Hours to be arranged. Given in groups; under same conditions as to credit, hours, and fees as in Music e27-28. Consult Professor FARNSWORTH

**Piano practice**—Fee for use of piano by extension students registered in Teachers College for eight or more points in a Session is \$10 per Session for six hours or less per week. Arrange hours at the office of Practical Arts (Room 107 Teachers College) on September 28

**P. A. Music e39-40—Violin.** Credit IV. 2 points each Session. Special fee \$50 for each Session. Not charged at \$8 per point. Mr. STOWELL

Hours to be arranged. Room 603 Dodge. Individual work

The work in this course includes a good position for scales in all keys, bowing, exercises, studies, solos, and special work for the development of good tone, together with ensemble and sight-reading classes.

### *Speech*

**Speech e1—Voice and diction, introductory.** Lectures, exercises, and individual practice. Credit IV. 2 points. Fee \$16. Professor LATHAM and assistant

Section I—9 a. m., Tuesday and Thursday, Winter Session

Section II—9-10:50 a. m., Saturday, Spring Session

A practical course in the development and use of the speaking voice and in the technique of speech.

**Speech e2—Oral composition and public speaking, introductory.** Individual practice with criticism and assignments. Credit IV. 2 points. Fee \$16. Miss DICKINSON

Section I—9-10:50 a. m., Saturday, Winter Session

Section II—9 a. m., Wednesday and Friday, Spring Session

The subjects assigned will be drawn from the students' other courses to avoid too heavy demands in preparation.

**Speech e3—Story-telling, introductory.** Class exercises, individual practice, and story hours. Credit IV. 2 points. Fee \$16. Professor LATHAM and assistant

Section I—11 a. m., Wednesday and Friday, Winter Session

Section II—4:10-6 p. m., Friday, Spring Session

A practical course for teachers and social workers.

**Speech e4—Oral reading, introductory.** Credit IV. 2 points. Fee \$16.  
Miss DICKINSON

11 a. m., Wednesday and Friday, Spring Session

A study of the elements of vocal expression with practice in reading selections from various types of literature and original compositions.

**Speech e57L—The teaching of speech correction.** Credit IV. 2 points.  
Fee \$16. Miss DICKINSON

4:10-6 p. m., Friday, Winter Session. Special limited class; fifteen students required

A study of the causes and cures of such speech difficulties as stammering and lisping, supplemented by clinical lectures and demonstrations. Practice in correcting speech defects common among children, under the supervision of the instructor.

**Speech e81—Dramatization—festivals and plays.** Credit IV. 2 points.  
Fee \$16. Professor LATHAM and lecturers

4:10-6 p. m., Thursday, Winter Session

**Speech e82—Dramatization—festivals and plays in secondary schools and community centers.** Credit IV. 2 points. Fee \$16

11 a. m.-12:50 p. m., Saturday, Spring Session

Other courses in music and speech for teachers, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to extension students whose general and technical preparation is satisfactory to Professor FARNSWORTH

## NURSING AND HEALTH

**Nursing e3—Physical care of infants and small children.** Lectures, demonstrations, and readings. Credit IV. 2 points. Fee \$16. Dr. KENYON and assistants

Section I—3:10-5 p. m., Monday, Winter Session. Repeated as

Section II—Spring Session

Presents the theory and practice of the care of infants and small children in a series of lectures and demonstrations. The following topics will be treated: the basis in physiological knowledge for the rational care of the child, the physical care of the infant and child, presenting in turn such topics as the daily régime of the infant, food, sleep, bathing, clothing; the child, from the third to the sixth year, nursery, clothing, food.

**Nursing e5—Home nursing.** Lectures, demonstrations, and laboratory practice. Credit IV. 2 points. Fee \$16. Miss DINES

Section I—2:10-5 p. m., Friday, Winter Session. Repeated as

Section II—Spring Session

This course deals with the prevention and care of illness in the home. It discusses such topics as proper surroundings for the sick, the early recognition of the common symptoms of disease, food for the sick, prevention and care of common ailments, such as colds, sore throats, etc., care of sick children and the aged, including simple nursing procedures and first-aid treatment for common household emergencies.

Prerequisite: Biology 4 or an equivalent course in physiology.



**Nursing e17—Occupations for invalids.** Credit IV. 2 points. Fee \$16.  
Miss COLLINS

2:10–6 p. m., Friday, Winter Session. Fifteen students required

This course deals with occupations as a diversional, curative or re-educational factor in various types of illness. Occupations especially adapted to use in bed or in the hospital ward are emphasized, including knotting, netting, rake knitting, simple rug making, seat weaving in cane and rush, leather work and novelties. The care and cost of materials and the use of waste materials will be considered; also, the choice of amusements, games, puzzles, reading, etc.

Other courses in nursing and health, described in the *Announcement of the School of Practical Arts*, may, with the approval of the Director of the School, be open to extension students whose technical preparation is satisfactory to Professor NUTTING

### PHYSICAL EDUCATION

Teachers and other mature workers who have completed two or more years of study in advance of high school may be admitted to certain sections and courses listed only in the *Announcement of the School of Practical Arts*. Apply at Desk E, Secretary's Office, Teachers College

The following extension courses are given in the Thompson Building of Teachers College, October 1, 1921, to May 15, 1922. First half-year (Winter Session) begins September 28. Second half-year (Spring Session) begins February 8

Lockers are available for women only. A deposit of twenty-five cents must be made for each locker key. This must be redeemed and gymnasium suits removed before June 6

The swimming-pool is reserved for women and children

Gymnasium shoes must be soft-soled and without heels

Information concerning gymnasium and swimming suits may be obtained from the Secretary of the Department of Physical Education

**Special lessons for women and children**—A number of special series of lessons in gymnastics, folk and natural dancing, swimming, and corrective gymnastics will be given from September, 1921, to May, 1922, in the Thompson Building of Teachers College by the School of Practical Arts in cooperation with the University Institute of Arts and Sciences. A special circular may be obtained in September from the Secretary of Teachers College

**Physical Training eA1–A2**—For women. 1 point each Session. Fee \$8 each Session. Miss YUNCK and assistants  
Section IV—2:10 p. m., Monday and Wednesday. Folk dancing

**Physical Training eB1–B2**—For women. 1 point each Session. Fee \$8 each Session. Miss YUNCK and assistants  
Section I—2:10 p. m., Tuesday and Thursday. Folk dancing

**Physical Training eC1–C2**—For women. 1 point each Session. Fee \$8 each Session. Miss YUNCK and assistants  
Section IV—3:10 p. m., Tuesday and Thursday, Room 255 Thompson  
Section V—4:10 p. m., Tuesday and Thursday, Room 255 Thompson



Section VI—5:10 p. m., Monday and Wednesday, Room 255 Thompson

Section VIII—Outdoor athletics and hikes. Hours for groups to be arranged, especially on Saturdays or other days

Sections V and VI are arranged with reference to the needs of mature students who wish the simpler forms of exercise. These include gymnastic exercises, games, swimming, and elementary dancing. The outdoor work of Section VIII will be under the direction of group leaders who will emphasize the principles of outdoor exercise for health.

**Physical Training eD1-D2**—For women. 1 point each Session. Fee \$8 each Session. Miss YUNCK and assistants

Section VII—3:10 p. m., Monday and Wednesday, Room 255 Thompson

Section VII is arranged to give practice in dancing to advanced students who have already had training equivalent to that in courses A, B, C.

**Physical Education e54—Corrective gymnastics, games and folk dancing.** Credit IV. 2 points. Fee \$16

11 a. m., Monday, Wednesday, and Friday, Spring Session

This condensed course is designed for school nurses and others who are interested in helping to introduce simple and wholesome forms of recreation into schools and communities. Certain physical defects common among school children will also be discussed and corrective exercises demonstrated. The work will include theory and practice in dramatic games, games of skill, simple folk dancing, and corrective gymnastics.

**Physical Education s59a-60a—Natural dancing.** 1 point each Session. Miss COLBY

4:10 p. m., Tuesday and Thursday. Room 256 Thompson. Ten students required

A course in the natural forms of dancing, leading from the rhythms of children's plays to more complex forms of motor expression based upon emotional and ideational elements.

A special costume is required.

**Physical Education e83-84—Educational hygiene.** Lectures, collateral reading, demonstration, and reports. Credit IV. 2 points each Session. Fee \$16 each Session. Professor WOOD

2:10 p. m., Monday and Wednesday. Room 164 Thompson

Education 183 deals with various phases of school hygiene. The chief topics of the course are: The place and scope of school hygiene in education; the physical organization and comparative development of the child; health examinations of children; control of communicable diseases in schools; discovery and treatment of chronic health defects; school sanitation; the hygiene of instruction; principles of health education with a brief review of materials and methods taken up in detail in the Winter Session; physical education with discussion of the various types of motor activities involved in the physical education of children of different ages and different types; application of principles of hygiene and physical education in the special education of abnormal and exceptional children.

**Physical Education e85-86—Play and playgrounds, and community centers.** Lectures, required reading, and observation. Credit IV. 2 points each Session. Fee \$16 each Session. Mr. GIBNEY

5:10 p. m., Tuesday and Thursday. Room 164 Thompson

This course is intended for men and women who are preparing for work in recreation systems and playgrounds. It aims to enrich the content of playground and community center work, to encourage the formation of standards, to develop a capacity for leadership, and to equip students for professional careers in the field covered.

**Physical Education e87-88—Hygiene of childhood and adolescence.** Lectures, reference reading, discussions, and reports. Credit IV. 2 points each Session. Fee \$16 each Session. Professor WOOD

Lecture, 11 a. m., Saturday, Conference, 12 m., Saturday. Room 164 Thompson

Physical Education 87 deals with the following topics: The principle of projected consciousness as applied in the nurture and education of children; brief review of organic evolution, heredity and prenatal influence; consideration of eugenics; application of biologic principles in care of infancy and childhood; relation of physical welfare to other values in the life of the child.

Physical Education 88 deals with the following topics: Significance and value of the lengthened period of immaturity in the human species; adolescent development with normal and abnormal characteristics; sex development with the direct and indirect influences upon the individual of various stages of growth; mental and emotional hygiene; education of the instincts and emotions; education for parenthood involving sex-hygiene and sex-education, with other factors.

**Physical Education e89—Principles and practice in physical education.** 2 points. Fee \$16. Professor WILLIAMS, Miss FROST, and others  
5:10 p. m., Monday and Tuesday

This course deals with the fundamental principles of physical education as a part of the educational process with practice in natural gymnastics as one form satisfying the present need for motor activity.

**Physical Education e97-98—Clubcraft.** Credit IV. 1 point each Session. Fee \$8 each Session. Mr. C. F. SMITH  
11 a. m., Monday

This course is intended to give the practical training required by club leaders and supervisors. A study of the principles, aims, and programs of the better established club movements and organizations will be made. Actual practical work will be done and opportunity provided for observation and study of Horace Mann clubs.

**Hygiene—**For courses in hygiene related to physical education, see p. 136

Other courses in physical education, with numbers below 100, described in the *Announcement of the School of Practical Arts*, may be made available for specially qualified extension students, who bring to the Director of the School of Practical Arts the written approval of Professors WOOD or WILLIAMS

# ACADEMIC CALENDAR

## 1921-1922

(For full Academic Calendar, apply to the Secretary of Columbia University)

1921

- |           |       |   |
|-----------|-------|---|
| July      | 5     | Tuesday. <b>Twenty-second Summer Session begins.</b>  |
| August    | 12    | Friday. <b>Twenty-second Summer Session ends.</b>   |
| September | 19    | Monday. Entrance and deficiency examinations begin.   |
| September | 21    | Wednesday. <b>Registration for Winter Session in University Extension (including the payment of fees) begins.</b>                   |
| September | 28    | Wednesday. <b>Winter Session, 168th year of Columbia University, begins.</b>  |
| September | 29    | Thursday. Classes in University Extension begin.  |
| October   | 8     | Saturday. Last day for registration for credit or for change of program in the Winter Session for students in University Extension. |
| November  | 8     | Tuesday. Election day, holiday.   |
| November  | 22    | Tuesday. <b>Annual Thanksgiving Service</b> in St. Paul's Chapel.   |
| November  | 24    | Thursday  |
|           | to 26 | Saturday, inclusive. Thanksgiving holidays.   |
| December  | 21    | Wednesday   |

to

1922

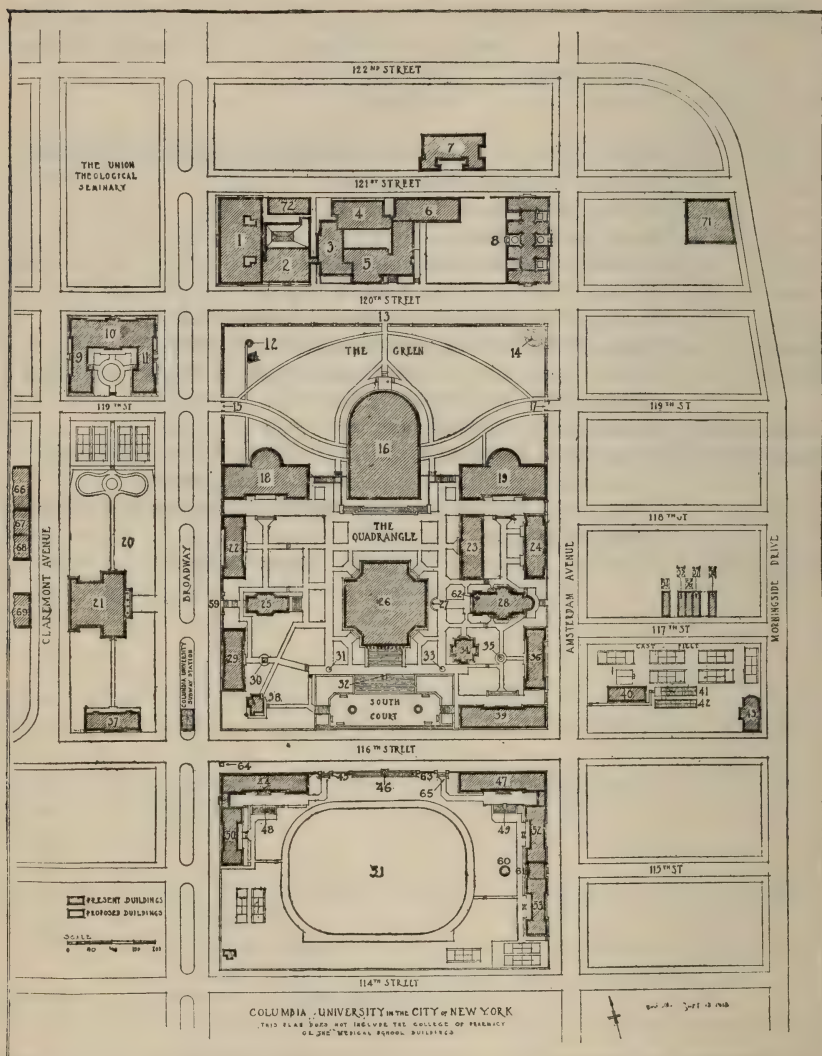
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| January  | 3  | Tuesday, inclusive. Christmas holidays.   |
| January  | 8  | Sunday. <b>Annual Commemoration Service</b> in St. Paul's Chapel.   |
| January  | 19 | Thursday. Mid-year entrance examinations begin.   |
| January  | 25 | Wednesday. Mid-year examinations begin.   |
| January  | 30 | Monday  |
|          | to |   |
| February | 4  | Saturday, inclusive. Mid-year examinations in University Extension.   |
| February | 2  | Thursday. <b>Registration for the Spring Session in University Extension (including the payment of fees) begins.</b>                |
| February | 7  | Tuesday. <b>Winter Session ends.</b>  |
| February | 8  | Wednesday. <b>Spring Session begins.</b> Classes in University Extension begin.   |
| February | 13 | Monday. Alumni Day.   |
| February | 18 | Saturday. Last day for registration for credit or for change of program in the Spring Session for students in University Extension. |
| February | 22 | Wednesday. Washington's Birthday, holiday.  |
| April    | 13 | Thursday  |
|          | to |   |
| April    | 17 | Monday, inclusive. Easter holidays.   |



April	15	Saturday. Last day for filing applications for the Professional Certificate in Secretarial Studies and in the Evening Courses in Business.
May to	22	Monday.
May	27	Saturday, inclusive. Final examinations in University Extension.
May	30	Tuesday. Memorial Day, holiday.
June	4	Sunday. <b>Baccalaureate Service.</b>
June	5	Monday. Class Day.
June	7	Wednesday. <b>Commencement Day.</b>
June	19	Monday. Entrance examinations begin.
July	10	Monday. <b>Twenty-third Summer Session begins.</b>
August	18	Friday. <b>Twenty-third Summer Session ends.</b>
September	11	Monday. Last day for filing applications for entrance examinations and for advanced standing.
September	18	Monday. Entrance examinations begin.
September	20	Wednesday. <b>Registration</b> for the Winter Session in University Extension (including the payment of fees) <b>begins.</b>
September	27	Wednesday. <b>Winter Session, 169th year of Columbia University, begins.</b>
September	28	Thursday. Classes in University Extension begin.

# INFORMATION

## IN REGARD TO THE BUILDINGS AND GROUNDS OF COLUMBIA UNIVERSITY



### Teachers College

1. Horace Mann School
  2. Thompson Memorial Bldg.
  3. Milbank Memorial Chapel
  4. Macy
  5. Main Building
  6. Household Arts
  7. Bancroft
  8. Whittier
- ### Barnard College
9. Fiske
  10. Milbank
  11. Brinckerhoff
  12. Milbank Quadrangle
  21. Students' Hall
  37. Brooks Hall
- ### Columbia University
12. Wilde Observatory
  13. Class of 1882 Gates
  14. Statue of the great God Pan
  15. Mapes Gates
  16. University
  17. Class of 1888 Gate
  18. Havemeyer
  19. Schermerhorn
  22. Engineering

23. Avery
24. Fayerweather
25. Earl
26. Library
27. Class of 1886 Exedra
28. St. Paul's Chapel
29. Mines
30. Meunier's Hammerman 1889 Mines Class Gift
31. Lafayette Post Flag Staff
32. Statue of Alma Mater
33. Class of 1881 Flag Staff
34. East
35. Class of 1887 Well Head
36. Philosophy
38. Faculty Club
39. Kent
40. Crocker Research
41. Botany Greenhouse
42. Agriculture Greenhouse
43. President's House
44. Journalism
45. Classes of 1884 and 1899 Tablet
46. Class of 1885 Sun Dial
47. Hamilton

48. Jefferson Statue
49. Hamilton Statue
50. Furnald
51. South Field
52. Hartley
53. Livingston
54. Columbia House
55. Dean Hawkes
56. Chaplain Knox
57. Maison Française
58. Carnegie Endowment
59. Class of 1891 Gates
60. Van Amringe Memorial 1906 Clock
62. Class of 1893 Chapel Bell
63. Rives Memorial Steps
64. Class of 1890 Pylon
65. John Purroy Mitchell Memorial
66. De Witt Clinton
67. Morris
68. John Jay
69. Tompkins
71. Seth Low
72. Annex





























UNIVERSITY OF ILLINOIS-URBANA



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